A W. R. C. Smith publication

FIFTY CENTS

Textile Industries

Formerly "COTTON"

JULY 1957

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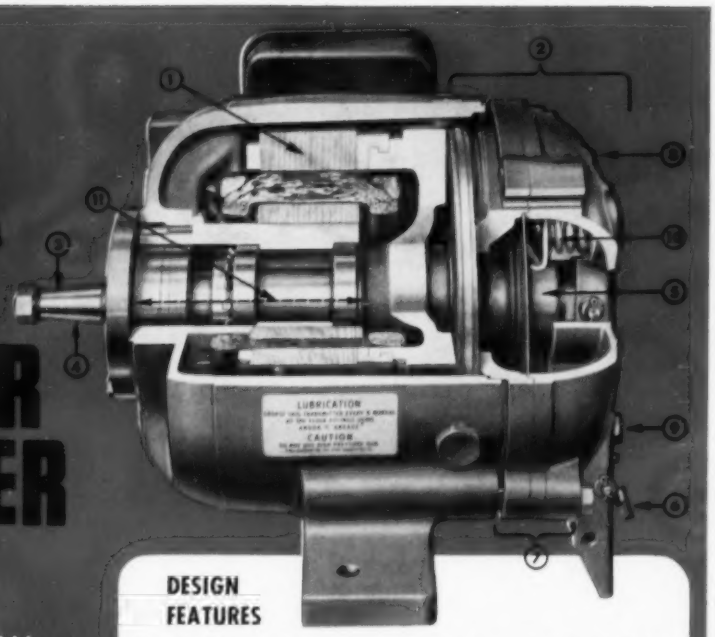
"BA" POWER TRANSMITTER

For Draper Looms

Exclusive new design features mean . . . *consistent* quality production . . . *peak* operating efficiency . . . minimum maintenance, labor and costs!

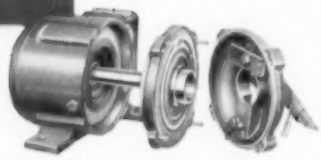


DESIGN FEATURES

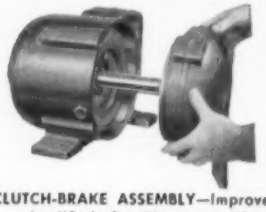
*1. High inertia inverted motor provides "stored energy" for smooth, fast starts and positive picking (maximum inertia with minimum size) . . . prevents regeneration.

STREAMLINED FRAME
Easy to clean. Roomy terminal box.

KINETIC BRAKING ACTION
(See Feature 6)



CLUTCH-ACTUATING BEARING—A strikingly new and improved method of mounting. (See Feature 5)



CLUTCH-BRAKE ASSEMBLY—Improved, simplified. Readily removable as a unit. (See Feature 2)

The original and only loom power transmitter . . . plus many outstanding design and construction features never before incorporated in a loom drive!

Over 40,000 Diehl Power Transmitters have been in continuous operation on DRAPER LOOMS—*most of them more than six years!* The "BA" Power Transmitter is even *more* compact, *more* streamlined, *more* efficient and *more* easily installed and serviced than its famous predecessor.

It's an inverted-type high inertia motor combined with a fast, positive clutch-brake mechanism. Note the exclusive design features—the clutch-actuating bearing mounting . . . the kinetic braking action . . . the unitized clutch-brake assembly. These important advancements mean increased production . . . improved cloth quality . . . lowered operating costs . . . fewer shutdowns. *Write, wire or phone today for full information.*

plus these outstanding Features

*2. **CLUTCH-BRAKE ASSEMBLY**—Improved and simplified for positive action and ease of adjustment. Removes readily as unit for maintenance, without disconnecting motor from loom frame.

3. **PINION**—Free accessibility for installation and maintenance.

4. **SHAFT**—Large diameter, alloy steel, heat treated—assures long life, eliminates need for outboard bearing.

*5. **CLUTCH-ACTUATING BEARING**—New diaphragm mounting for frictionless clutch action, positive radial rigidity of bearing . . . eliminates fretting corrosion . . . means full self-alignment of bearing for maximum life.

*6. **KINETIC BRAKING ACTION**—For rapid, accurate stops. Particularly desirable for center fork detection looms.

7. **CLUTCH AND BRAKE ADJUSTMENT**—Simple and convenient. Provides visible check on brake alignment.

*8. **CLUTCH-SETTING INDICATOR**—Built integral with unit for instantaneous external checking of clutch setting.

9. **SAFETY LATCH**—Built integral with unit. Prevents accidental engagement of clutch.

10. **CLUTCH-LOADING ASSEMBLY**—Internally located, hence tamper-proof.

11. **SHAFT-END BEARINGS**—Arrangement simplified and improved. Two ball bearings and an extra large roller bearing assure maximum life.

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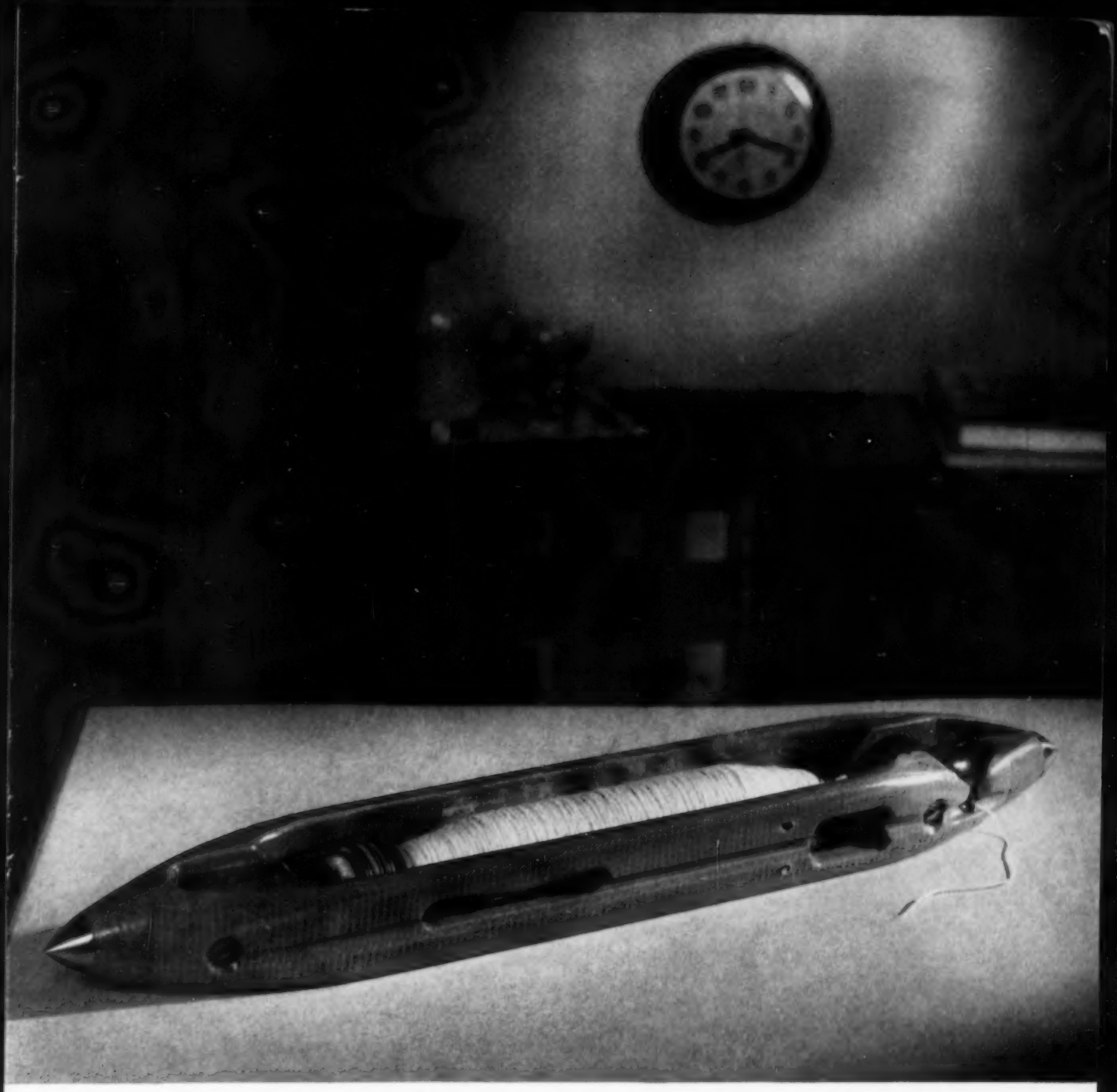

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Operating under similar mill conditions the average life of a group of Tru-Mold Shuttles is over 6,000 hours.

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NBP BPA

Textile Industries

Formerly "COTTON"

Vol. 121, No. 7
July, 1957

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Shorts and Remnants

By J. C. C.

► Get out the fireworks. Haul out the flag. Get going for the beach, mountains, lake, or just settle down in the backyard with some cold lemonade and a picnic lunch and celebrate Independence Day—July 4

—the anniversary of the Declaration of Independence.

We wonder what some of the folks signing that document and sparking the beginnings of the good old U.S.A.

would think of things today. (Actually, formal signing of the Declaration was not until August 2, but July 4 makes a better holiday so let's not start any controversy.)

► Anyway, some of our good forefathers might think twice about signing if they could see today's skyscrapers, jet planes, guided missiles, atomic energy, hydrogen bombs, television, electric bun-warmers, electronic eyes, and Miltown. We can sort of visualize what old "penny saved, penny earned" Ben Franklin would think of two cars in every garage and a $73,000,000,000 national budget. That is something like $450 for every man, woman, and child in the U.S.A. per year for being governed — counting about 63,000,000 wage earners. So, it's over $1100 a year for every salaried employee. Looks like the only way you can get ahead of the game is get married and have a bunch of kids. You get more government per dollar that way.

► Maybe that's not the answer. The

Photo courtesy Burlington Decorative Fabrics, Burlington Industries, Inc.

New way to back a winner

Textile manufacturers have looked long and hard for a means of improving the performance of fabrics for upholstery, drapes, handbags and footwear. Many types of backing were tried, but most of these presented new problems—in reduced flexibility and resilience, high cost, objectionable odor, poor adhesion or lack of permanence.

Finally, one industry leader tried a coating based on PLIOLITE LATEX. Barely visible, this lightweight, odorless backing "muscles" fabrics in every direction. It helps them retain their shape, even after severe stretching—and reduces wrinkling. It also improves body and drape, with increased resistance to raveling, tearing or snagging. *And it's permanent!*

If you are interested in light-colored latices for compounding customer-winning backings, sizes, saturants or finishes for all types of fabrics, it will pay you to know more about PLIOLITE LATEX. Learn, too, about the other uses for this versatile latex and other resin and rubber latices produced by Goodyear. You can, just by writing for details plus the *Tech Book Bulletins* to:

Goodyear, Chemical Division, Akron 16, Ohio.

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Send me the facts about Industrial Georgia, especially concerning _____

Name _____ Position _____

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This message sponsored jointly by: *The State of Georgia, The Georgia Chamber of Commerce, and Delta Air Lines, Inc.*

Shorts and Remnants

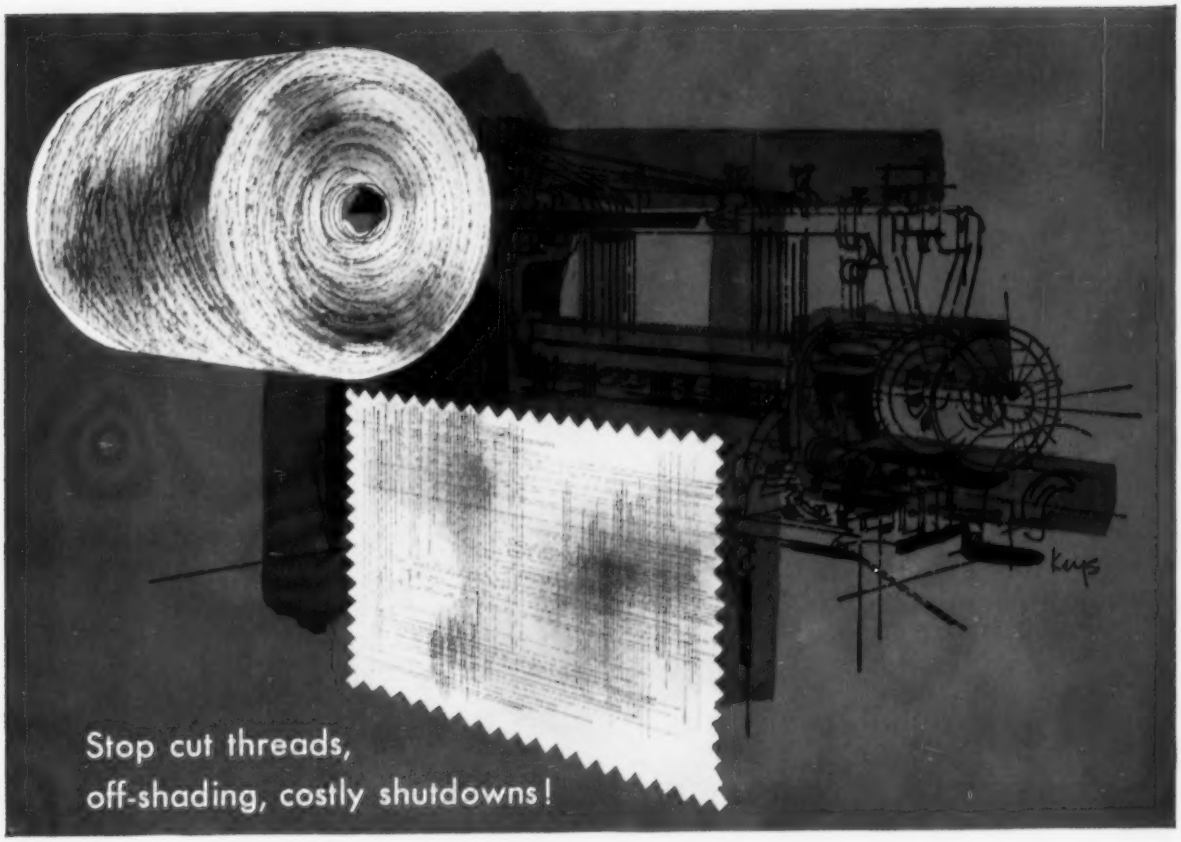
little woman will see to the more government, and the kids will help; but both young'uns and wives come high these days. They're worth it, but you probably can't win. You could secede and tell the tax collector you don't want to subscribe for any government for a while, but that would increase the jail population and make it rougher on the rest of us.

► While we are on the subject of July, remember that it is also the birthday of Nathan Bedford Forrest, one of old S & R's favorite Confederate generals. Like TI and its service to readers and advertisers, he believed in getting there "fustest, with the mostest." Maybe there is some disagreement as to whether he actually said those words; but he could have as he talked untainted, backwoods style to his dying day.

Born in a one-room log cabin July 13, 1821, he joined up with the Tennessee Mounted Rifles as a private July 14, 1861. Almost ignored by historians, he was one of the greatest "fighters" of all time. He and General Patton of World War #2 would have been buddies till one of them killed the other. Certain it is that Gen. Sherman offered $10,000 for his capture, dead or alive. And both Sherman and Gen. Robert E. Lee claimed that Forrest was the ablest general in the War between the States. Confederate Pres. Jefferson Davis may not have liked his ways, but his flank and rear surprise attacks held Alabama and western points throughout the war, defeated bigger Union forces time after time. He "fit" a good fight with over 20 horses shot out from under him, and probably killing more men personally than any other commanding officer in all history.

► In case you missed out on Father's Day, here's one with a sock

in it as sent in by Lassiter Corp., New York and Charlotte, who de-



Use MORTON CHEMICAL GRADE '999' Salt

'999' is the all sodium salt (sodium chloride and a trace of sodium sulphate) that prevents dyeing failures caused by salt high in calcium.

Morton Chemical Grade '999' Salt makes it possible for you to get softer finishes, more even shades, greater color intensity. That's because Morton '999' is a low-cost, high purity evaporated salt, free of objectionable calcium and magnesium compounds.

Morton Chemical Grade '999' is more than 99.9% pure sodium chloride, recommended for use whenever commercial calcium-free salt is required.

Available in 100-lb. bags or bulk, '999' is specifically recommended when direct salting is used in dyeing raw-stock, package, beam, beck or jig with either sulphur, direct, or naphthol dyes.

☐ *Please send me more information about Morton Chemical Grade '999' Salt.*

☐ *I would also like to know how much I can reduce calcium and magnesium content by using Morton '999' Salt. Please have a Morton Brine Engineer call on me to explain the benefits of using Chemical Grade '999' Salt.*

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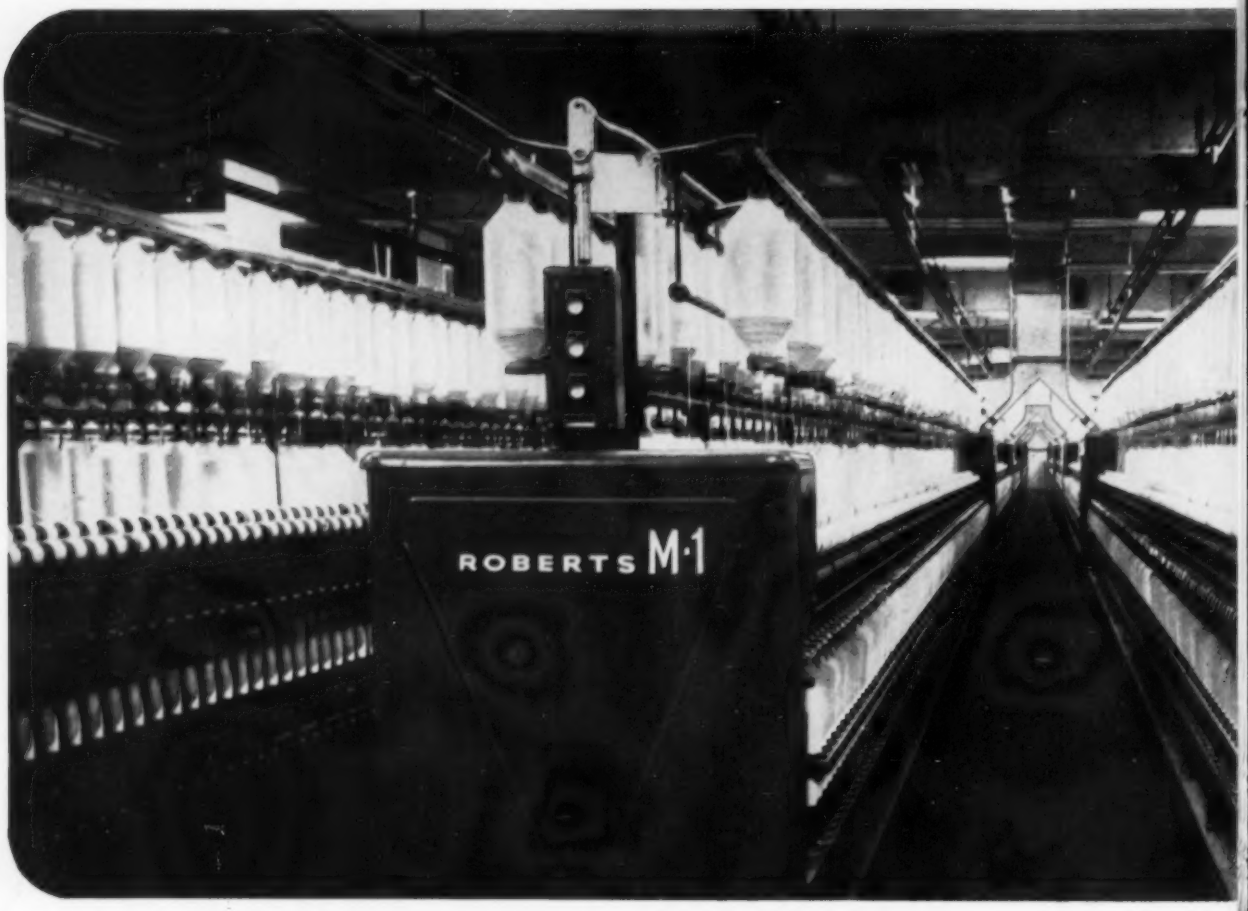


ROBERTS SPINNING

Today's standard for production, yarn quality and investment

Roberts Spinning is setting today's standard for comparison in high drafts, package sizes, roving bobbin sizes, front roll speeds, ends up, yarn break factor—and at the lowest investment cost per spindle.

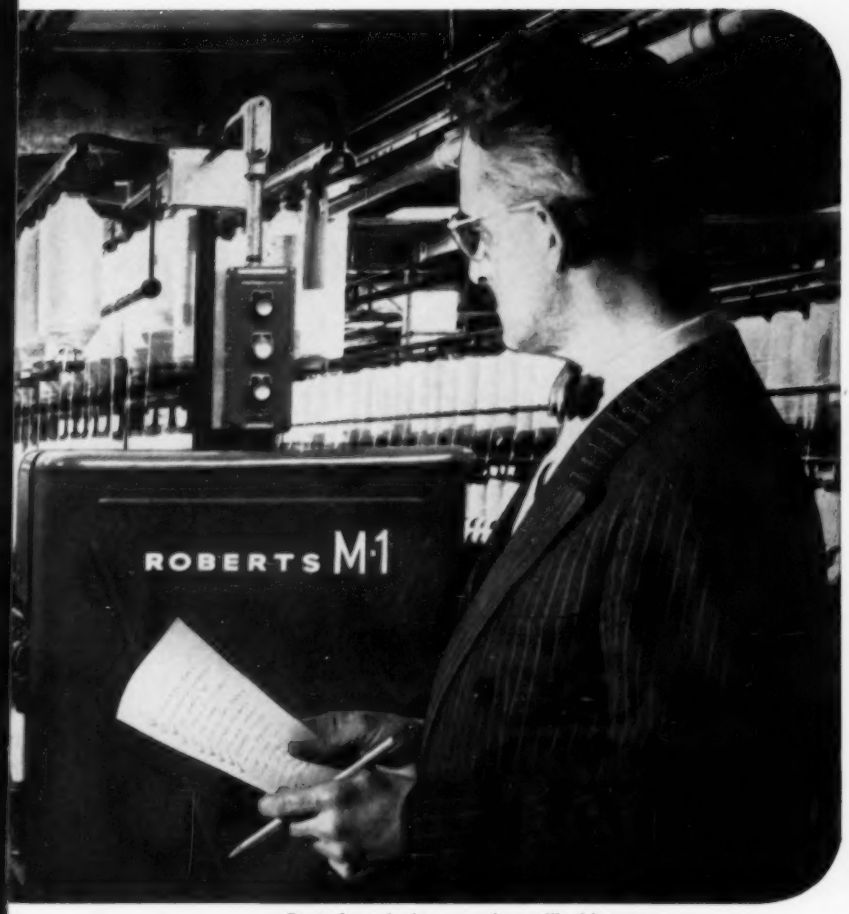
TRIED AND PROVEN. The Roberts M-1 Spinning Frame is simple and straightforward, free from radical innovations or gadgets. Its design has already been tried and proven in many successful applications. It embodies all the ball bearing features most wanted in a modern spinning frame, giving highest production and lowest maintenance.

ROBERTS DRAFTING. Roberts Double-Apron Drafting produces highest break factors, best yarn evenness and lowest ends down in a range of drafts from 10 to 60, for yarn numbers from 2's to 100's, in cotton, synthetics with staples up to 3 inches long, or blends.

LARGE PACKAGE FLEXIBILITY. One basic model of the Roberts M-1 Spinning Frame is adapted to run warp bobbins with lengths from 10 inches to 12 inches as well as filling quills. Standard gauges from 3 inches to 4½ inches can be arranged to employ the maximum desirable ring size suitable for the yarn number and twist constant.

RUGGEDNESS WITH SIMPLICITY. The frame chassis is of rugged construction. The working motions use ball bearings for every turning and oscillating motion where practical. The all-ball-bearing head design is outstanding in its simplicity and flexibility. All gears in the head are hardened and have one pitch, one width, one bore and one keyway, making them completely interchangeable. Greased-for-life bearings are used in the head and all plain bearings and studs are eliminated. Draft and lay constants are adjusted simply over the complete range of yarn numbers.

STANDARD FEATURES. Standard equipment includes Roberts Ball Bearing Spindles, Roberts built-in UnitVac Suction Cleaning. Roberts AeroCreels are available in every desired package size, single or double.



Part of a spinning room in a mill with over 100 Roberts 25-inch Spinning Frames.

ROBERTS SPINNING AVAILABLE IN 3 FORMS PROVIDES MODERNIZATION AT LOWEST COST

The cost-cutting, performance, and quality features of Roberts Spinning can be obtained through changeovers to the mills' existing spinning frames, or through rebuilt frames supplied by Roberts, as well as Roberts M-1 Spinning Frames. Roberts Proposals for Spinning Modernization provide comparison on these 3 methods.

CHANGEOVERS to the mills' existing machinery can include drafting systems, spindles, creels, suction cleaning, tape drive, gearing, or any combination of these to provide the maximum return for minimum expenditures. Performance equal to new can be built into mills' existing machinery if desired in every manner and form.

ROBERTS MODEL 55-R REBUILT FRAMES provide complete new spinning performance making use only of non-functional support members of older frames, thus affecting a substantial savings and taking advantage of the all-new spinning performance and features identical to all-new frames.

ROBERTS M-1 SPINNING FRAMES are excitingly new from the ground up, with all ball bearing features. They are available in 39 inch, 36 inch, and the space-saving 25 inch widths.

ROBERTS COMPANY
SANFORD, NORTH CAROLINA

ROBERTS SPINNING NEWS

TOP ROLL SUSPENSION USES BALL BEARINGS IN ALL THREE LINES

The Roberts Ball Bearing Top Roll Suspension System uses double-row ball bearings in front, middle and back lines and incorporates many other important design advantages.

Cots have ½" hole diameter, revolve together making lap removal simpler, and are buffed on standard equipment, without attachments. Full length revolving clearers are used.

Front and back rolls are interchangeable making sequence buffing possible.

The double-row bearing raceways are ground directly into ½" shafts. Bearings are grease-packed for life and a 2-piece labyrinth seal protects them from lint entrance and roll picker damage.

The system has controlled self-alignment. Conventional deadweighting or new spring weighting is optional.

An alternate arrangement also available employs a ball bearing top roll and special suspension on the front line only with Roberts Cap Bars and solid top rolls on middle and back top rolls.

Roberts also continues to offer its No-Oil Cap Bar and Saddle system for all three lines, now installed in more than 2½ million spindles.

ROBERTS M-1 SPINNING FRAMES MADE IN THREE WIDTHS

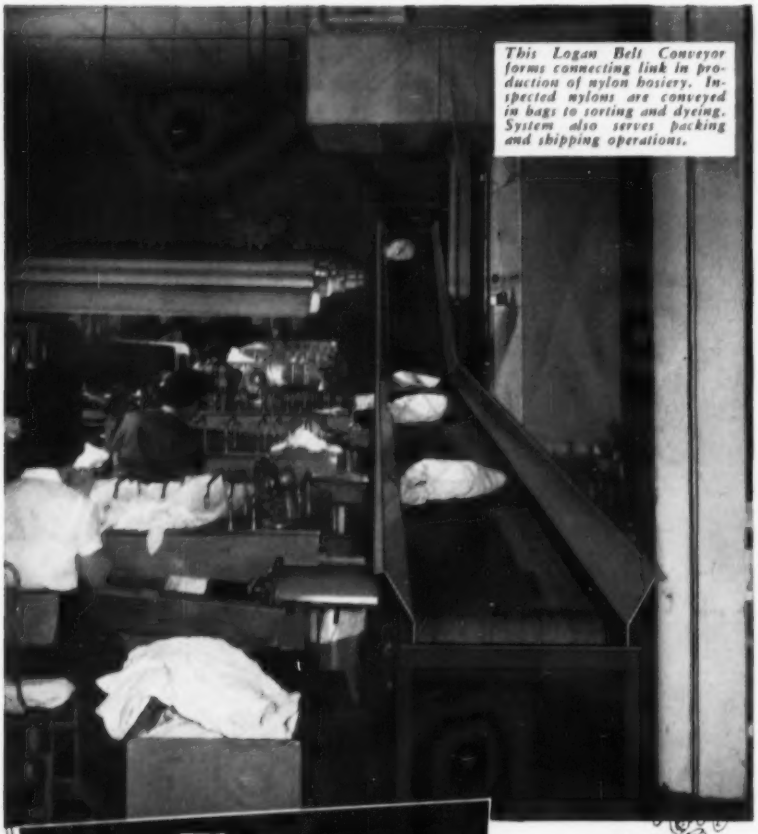
Where it is desirable to match frame widths already in the mill, Roberts makes and incorporates all of its design features of its new frames in standard 36 and 39 inch widths. All the ball bearing features and details are built into these wider frames.

The Roberts M-1 25 inch wide Spinning Frame permits 5 frames instead of 4 in a 25 foot mill bay, retaining 30-inch aisles and increasing yarn production 25% in the same place.

Creel designs have been arranged for the frames to handle 12 by 7 roving packages on as low as a 3-inch gauge frame. 10 by 5 double creels are designed for 3½ inch and larger gauges. In all cases, widths and heights of creel are not excessive with consideration being given for ease of creeling for the operators.

ROBERTS "TURNKEY" ERECTION SERVICE

Roberts "Turnkey" Erection Service is available in all 3 modernization arrangements: buying complete new spinning frames, buying modernized frames, or changing over the frames on your floor. In each arrangement, Roberts is entirely responsible for installation and performance.

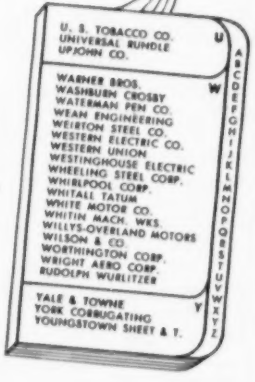


This Logan Belt Conveyor forms connecting link in production of nylon hosiery. Inspected nylons are conveyed in bags to sorting and dyeing. System also serves packing and shipping operations.

The LEADERS use *Logan*

The mark of a leader is—"ability to deliver the goods." In more ways than one, Logan Conveyors aid the nation's leading industries to do just that. Logan equipment makes important intra-plant deliveries, linking up all production operations into one efficient whole. And these conveyors, built to convenient working heights, save bending, lifting and straining, too. Remember you get value-plus, that something-added when you specify Logan-engineered conveying equipment. Write today to—

LOGAN CO., 206 CABEL ST., LOUISVILLE 6, KENTUCKY



Logan Conveyors

Shorts and Remnants

signed and made the package pictured here for Sears.

Invention

Long ago, before textiles were begun,
Our ancestors—poor things—did not have any fun.
They dressed in straws, or skins and hair;
Or otherwise they just went bare.

We can't see them now, as they were then,
Because we have some clever textile men
Who make the ladies look much better
Dressed in things and a sweater.

► Again we are indebted to mill man and poet **Watson J. Wood** of Knitters Ltd., Lindsay, Ont., Can., for the above contribution to brighten our corner.

► Time out for Station Identification. This is Station TI bringing you the best in the textile industry every month — first in the textile field. Keep Your Eye On TI.

► A newspaper clipping indicates that 236 big banners advertising Memphis' Cotton Carnival were made of rayon. This is as good a time as any to plug TI's big *Synthetics* issue coming up in Sept. Look for it.

► No! Please, not this. Added to other synthetics, General Tire & Rubber Co. is promoting polyurethane foam for wearing apparel as noted below. "Unique," they say, and that

is probably an understatement.

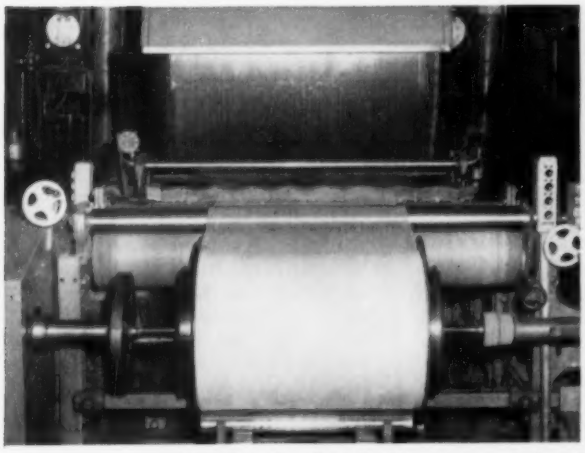
► We got lots of depts. A New York inquiry comes to "Back Nos. Dept." Speaking of depts, we don't have an adv. agency dept.; but if we did, we'd put in an item about good friend **E. J. Presser** of E. J. Presser & Co., Charlotte, N. C., branching out with re-

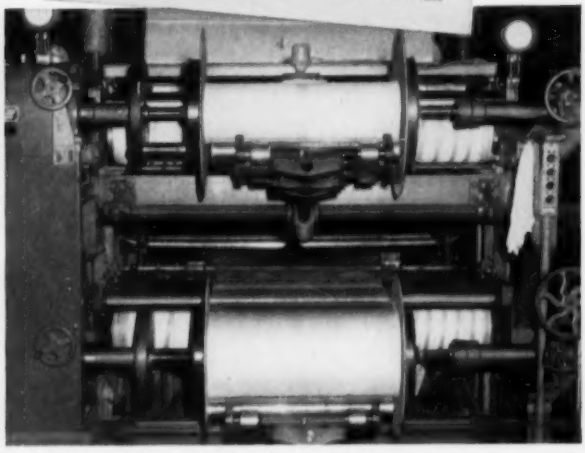
VICKERS® HYDRAULIC SLASHER DRIVES

WIND BETTER LOOM BEAMS FASTER

For

ANY TENSION • ANY SPEED • ANY SET
ANY YARN • ANY DIAMETER • ANY WIDTH
ANY HORSEPOWER • ANY DOUBLE HEAD
ANY SINGLE HEAD • ANY SLASHER





West Point Foundry & Machine Company single and double head slashers with Vickers Hydraulic Drives.

This is the slasher drive that can really meet *all* your needs . . . flexibility is sufficient to cover all known conditions of slashing. Now your yarn and your beams can be wound exactly the way you want them . . . and quality is always the same.

Design is unusually compact . . . the drive requires no floor space outside of the slasher head end frame dimensions. Automatic overload protection and dependability are important features. Completely sealed and inherently self-lubricated, there is no need for oiling and greasing.

ONLY VICKERS HYDRAULIC SLASHER DRIVES HAVE ALL THESE ADVANTAGES:

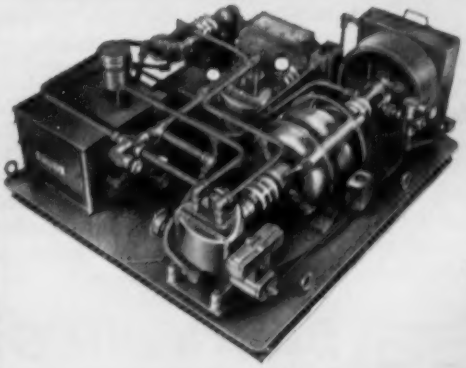
1. Better Tension Control
2. Complete Speed Range
3. Smoother Acceleration and Deceleration
4. Selective Creep Speeds
5. Better Response
6. Reduced Operating Costs

For further information about Vickers Hydraulics on slasher drives, write for Bulletin 55-71. For information regarding application of Vickers Hydraulics to general textile machinery, write for Bulletin 54-66.

VICKERS INCORPORATED
DIVISION OF SPERRY RAND CORPORATION
Machinery Hydraulics Division
ADMINISTRATIVE and ENGINEERING CENTER
Department 1554 • Detroit 32, Michigan

Application Engineering Offices: • ATLANTA • CHICAGO • CINCINNATI CLEVELAND • DETROIT • GRAND RAPIDS • HOUSTON • LOS ANGELES AREA (El Segundo) • MINNEAPOLIS • NEW YORK AREA (Summit, N.J.) PHILADELPHIA AREA (Media) • PITTSBURGH AREA (Mt. Lebanon) PORTLAND, ORE. • ROCHESTER • ROCKFORD • SAN FRANCISCO AREA (Berkeley) • SEATTLE • ST. LOUIS • TULSA • WASHINGTON • WORCESTER
IN CANADA: Vickers-Sperry of Canada, Ltd., Toronto

STANDARD VICKERS® HYDRAULIC SLASHER DRIVE PACKAGE



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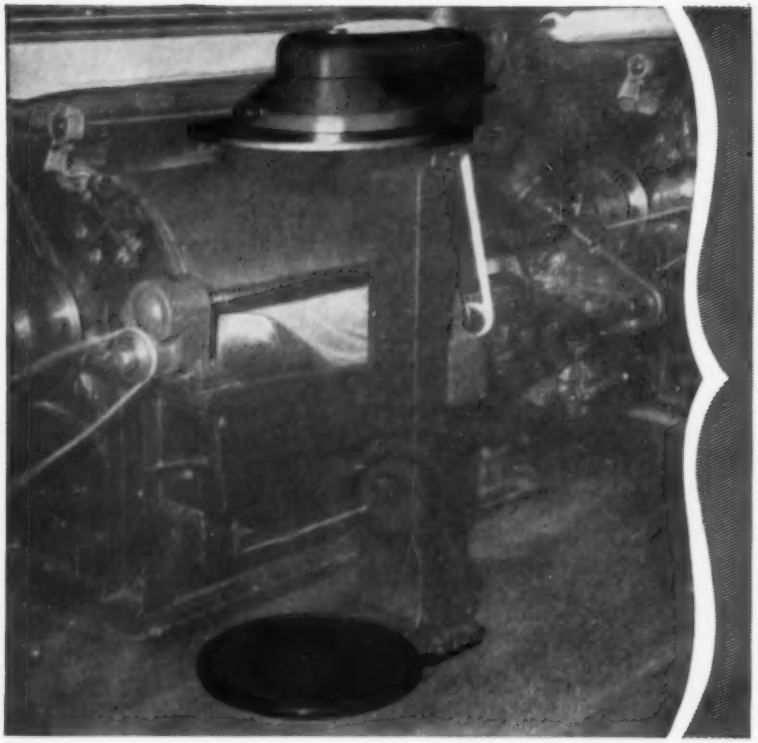
ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921



SOUTHERN STATES' NEW COILER HEAD AND BASE MAKE CONVERSION TO LARGER CANS SELF-PAYING

For mills seeking a low initial cost for conversion to larger cans, Southern States' new conversion unit is the answer. It consists of: 1) the identical, vastly improved ball bearing head used on the new complete coiler; 2) an adapter spacer and upright shaft for increased coiler height necessary to accommodate 36" or 42" cans; and 3) a new, standard-type base assembly with a conventional gear system for driving the can table. All necessary components are furnished in kit form for quick installation, *using your existing stands.*

Southern States' Conversion Units are designed for use on any make cotton card and for accommodating cans of larger diameter.

Case histories of mills prove conclusively that Southern States' conversions are so economical they soon pay for themselves. For a small initial investment, you enjoy all the advantages of more efficient handling; lower operating costs; improved quality; simplified oiling; ease of maintenance; smaller parts inventory; and years of satisfactory service.

Get full facts from your Southern States representative or write direct to us for Technical Bulletin No. 203-a.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA

Shorts and Remnants

cent addition of **James W. Barnette** as account executive. Best wishes for continued expansion.

Wm. G. Ehrlich, Sta-Dry Chem. Co., Detroit, writes for source of supply on woven cloth tubing about 2" diameter moderately fine count. Anybody want to quote? **S. A. Shuman,** Pres. Karff-Eisemann Co., Philadelphia, sends sample and wants name of mills making what looks like needle-punched rayon batt. Thanks to **E. W. Gehrung,** Proctor & Schwartz, Inc., for identifying sample.

V. O. Roberson, Jr., V. P. United Merchants & Mfrs., Inc., Greenville, S. C., requests five copies of complete series on "'Standard' Wool Fabrics are Not Standard" (April & May '57). **E. J. D. Poole,** Wool Industries Research Assn., Leeds, Eng., also asked for extra copies of this series. **P. F. Milne,** Pur. Agt. Paton Mfg. Co., Ltd., Sherbrooke, Que., Can., asks for two extra copies these two issues.

George E. Schwankoff, Goodall-Sanford, Inc., St. Louis, writes for further data on pliability and stiffness testers pictured in the March installment of "Warp Sizing." International Rayon Trading Co., Arnhem, Holland, wants more information on "Vinyl Coated Nylon Yarn" (Mar. '57). Arnold Luster, Fibre Cone Finishing Co., Los Angeles, wants more on "Protekta" resin finish to protect uniform fabrics from food, beverage stains (May '57).

Wanted to Buy

W. E. Kelly, Supt. Providence Braid Co., Pawtucket, sends inquiry on Immunol (Harry Miller Corp. Phila.) ad Apr. '57; **B. Kahn,** Coosa Yarn Mills, Attalla, Ala., wants maker of nylon tapes for spinning (May '57); **J. M. Connor,** Mgr. Hyde Park Mills, Covington, Tenn., inquires on Wicaco spindle oiler ad (May '57).

Julius B. Grosso, Ludlow Mfg. & Sales Co., Allentown, Pa., wants makers of plastic or glass screens to control fly (May '57); **H. C. Clark,** Supt. Montreal Cottons Ltd., Valley Field, Que., Can., wants more data on Southern States ad (May '57); **H. Moll,** Pres. Fambra, S.A., writes for further data on interlock sweater

Shorts and Remnants

machine of Brinton Div., Scott & Williams (Mar. '57); **Joseph Riendeau,** Supt. Bahrens Woolen Mills, Brooklyn, requests further data on Baxter ad (May '57) on Money-Saving Substitute for Shuttle Fur; **Fred Perkerson,** Southern Utilization Research and Development Div., U.S.D.A., asks details on West Point Foundry's Callaway sample and research slasher ad May '57.

► Foreign attendance at recent Knitting Arts Exhibition gave Scott & Williams, Inc., an opportunity to fly European and South American knitting mill customers and S&W reps to

Laconia, N. H., for plant trip. Two groups are pictured above.

► **Hyatt Atwood** (left), Pres. Herr Mfg. Co., must have been pleased with the Show, or the ring business

must be good. He is even getting a smile out of TI's associate editor **Milton May.**

SOUTHERN STATES' NEW COILER LINE HAS ALL ENGINEERING AND DESIGN FEATURES WANTED BY MILL MEN

Name the features you desire most and you will find them on Southern States' vastly improved coilers. To provide mills with a truly premium-quality coiler, every engineering and design feature wanted by mill men has been included.

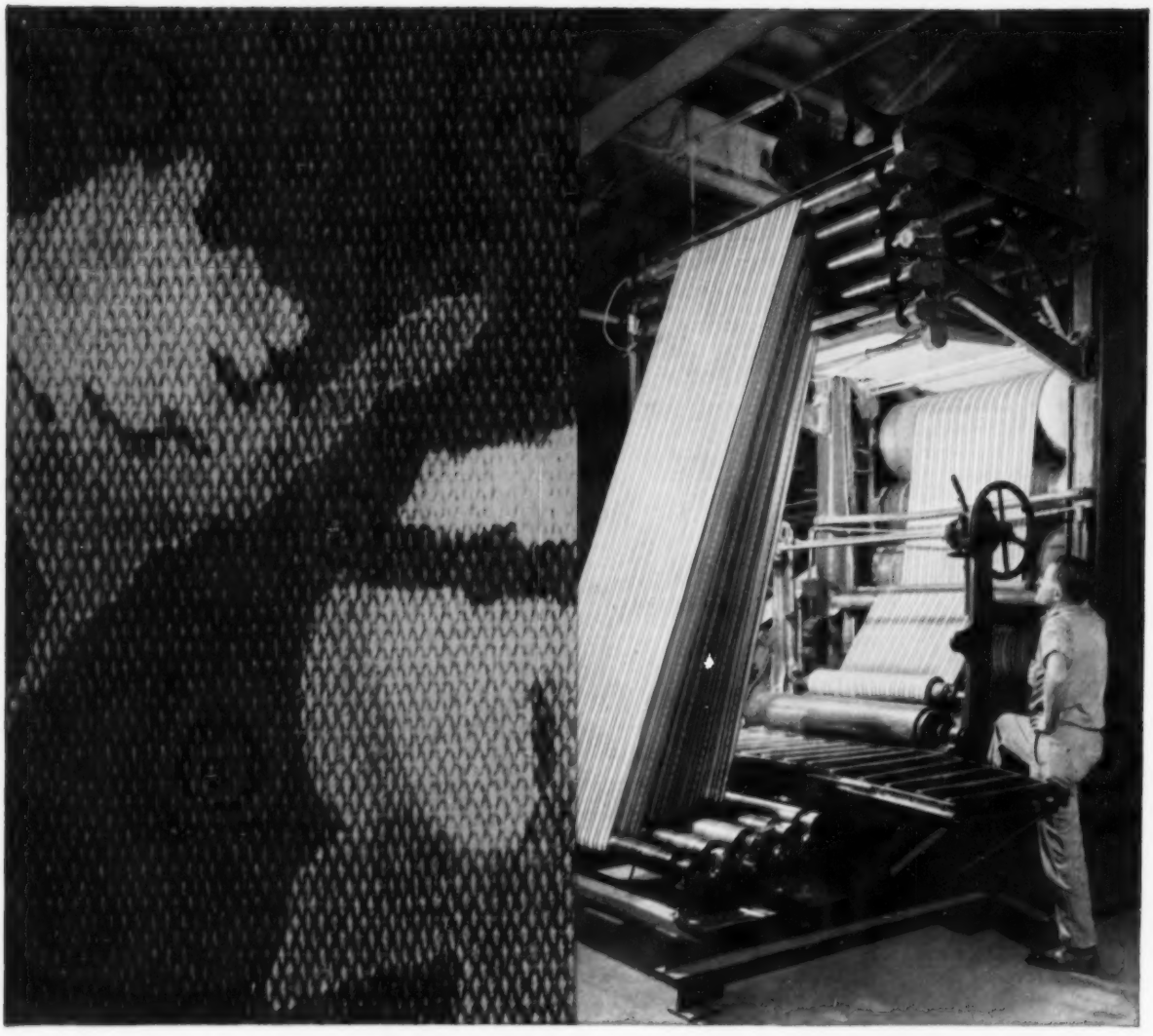
Here are some of them: available for all can sizes . . . ball bearing throughout—head, shaft, and can table . . . cut tooth gears throughout . . . head and base may be rotated . . . strong tubular steel stand . . . precision-ground calender rolls . . . self-aligning pillow blocks on upright and calender roll shafts . . . fully adjustable can table . . . quickly detached coil spring roll-loading device. Others are fully described in our technical bulletin.

Southern States Coilers are designed for direct attachment to any make of card, left or right hand. Installation is rapid and economical.

Your mill can profit by this coiler that is quality-built throughout to operate at peak performance, with minimum maintenance, for years.

Get the facts from your Southern States representative or write direct to us for Technical Bulletin 203-a.

SOUTHERN STATES
EQUIPMENT CORP.
HAMPTON, GEORGIA



FLAWLESS FINISHES

built into millions of yards of cotton print goods at Rock Hill

The Rock Hill Printing and Finishing Company of Rock Hill, South Carolina, a subsidiary of M. Lowenstein & Sons, Inc., New York, N. Y., has become "the largest textile print works in the world" by producing beautifully printed and finished fabrics with mass-production economies.

That is why Rock Hill has used RHONITE R-1 finishes for many years. With RHONITE, cotton fabrics are given lifelong wrinkle resistance, improved dimensional stability and permanent surface effects—all without loss of desired handle. At the same time, RHONITE R-1 finishes are so easy to formulate, work with, and apply that they fit in perfectly with large-scale continuous processing. Write today for full details.

Chemicals for Industry

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

RHONITE *is a trade-mark, Reg. U. S. Pat. Off. and in principal foreign countries.*

RHONITE R-1

Double Check Strap Life

with Gates *TEX-HIDE* Multi-Check Straps

Actual service records prove Gates patented Tex-Hide Multi-Check Straps last twice as long as ordinary straps.

Unlike straps made in one solid band, Gates Multi-Checks are composed of four separate bands.

Multi-Checks minimize adjustments . . . cut "down time"

Tex-Hide — an exclusive Gates material — has a special capacity for absorbing shocks over long periods.

Furthermore, it is unaffected by humidity . . . will not stretch or distort like leather . . . retains its original shape throughout the life of the strap. Thus, adjustments are seldom required.

With Gates patented Tex-Hide Multi-Check Straps you'll get *smoother* loom operation . . . *higher* quality cloth . . . lower maintenance costs.

The Mark of Gates® *Specialized* Research

The Gates Rubber Co., Denver, Colorado

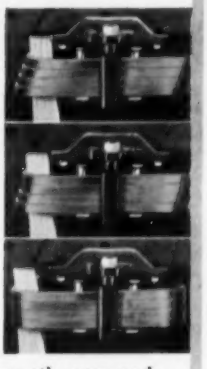
GATES Distributors are in the Yellow Pages

TPA-161

See the difference

With the ordinary one-band strap all the shock and wear from the picker stick are concentrated at one point. The strap deforms rapidly; takes a permanent bowed set. The deformed strap checks only on the extreme ends of the pick and return stroke — result is an uneven check.

Now see why the *four bands* of the Gates patented Tex-Hide Multi-Check Strap give smoother checking action . . . insure long life.



1. As the checking action begins, a portion of the picker stick force is absorbed by the top band.

2. As the stick continues its return motion, the second band comes into play, absorbing more of the shock.

3. And the checking action is completed as the third and fourth bands gradually absorb the remaining energy in the picker stick.

The checking action is smooth, even and gentle — wear is distributed across the whole width of the strap. As a result, Gates patented Tex-Hide Multi-Check Straps are lasting twice as long as the best one-band straps available.

Take-up Roll Coverings
Card Bands
Cone and Evener Belts
Spinning Frame Drives

Reversible Pickers

Tex-Hide Harness Straps

Tex-Hide and Vulco Loop Pickers

Tex-Hide, Vulco and Super Tex-Hide Lug Straps

Gates Textile Accessories

OUTPERFORMS — OUTSELLS
ALL OTHERS COMBINED!

BOTH HEAD AND BASE SWIVEL FOR ADJUSTMENT

SAVES LABOR

EASIER TO INSTALL

TAKES LESS FLOOR SPACE

McDONOUGH
UNIVERSAL CARD COILER
(Patents Pending)

This coiler is its own best salesman. It outsells all the rest put together because it out performs all others. It saves labor by putting more sliver in the can. Its quality construction, including sealed ball-bearings, hardened steel gears, etc., means extra years of dependable service. Ask for free folder with complete specifications.

Let this coiler prove its worth to you in your mill. Have one installed on a

90 DAY TRIAL *Without Obligation*

Since 1890

McDONOUGH POWER EQUIPMENT, INC.
MACHINE & FOUNDRY DIVISION
McDONOUGH, GA., U.S.A.

He Liked Our Knitting Show Special

" . . . TEXTILE INDUSTRIES has done an excellent job on the coverage of the Knitting Arts Exhibition. . . . "

ROY A. CHENEY
Pres.
Underwear Institute
New York, N. Y.

Knitting "Seal of Approval"

" . . . First of all, I think the Industry (knitting) is on the right track in trying to promote a 'Seal of Approval' campaign. The success of this campaign will of course depend to a large measure on two things. A vigorous advertising campaign to the buyers as well as the consuming public. It will also be necessary to have a strong policing policy, otherwise it will fall apart. One of the mill men I came back with, also brought up an interesting angle. He said that Seal of Approval on a 29¢ sock should be a different color perhaps than the Seal of Approval on a dollar sock, lying on the retail counter. Something to think about. Perhaps we could use five or six colors for different price brackets. . . "

MORRIS A. SPEIZMAN
Pres.
Morris Speizman Co., Inc.
Charlotte, N. C.

Inadequate Index?

" . . . You have a splendid publication and it has improved in many respects the last few years; however your readers still complain about quickly relocating articles they desire to re-read because of inadequate index, no author index, and lack of continuous pages during the year. . . "

MRS. WILLIS JONES
Research Div.
West Point Mfg. Co.
Shawmut, Ala.

► TI was first in textile field to start publishing an annual index of articles; realizes there is much room for improvement.

Textile Process Patents

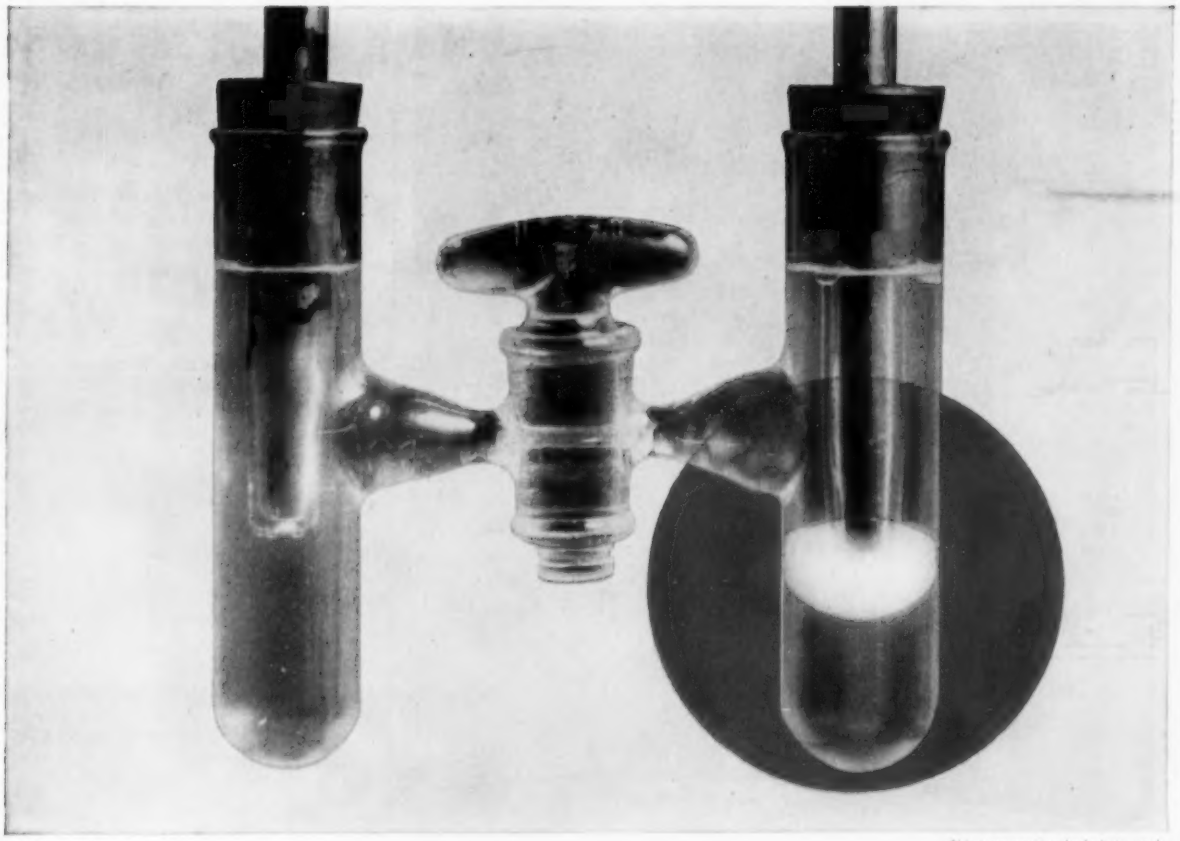
"We are interested in securing a list of the more important textile process patents that have been issued over the past several years. . . "

CLOVIS S. POWELL
Interchemical Corp.
Rock Hill, S. C.

► Patents covered monthly by "Textile Technology Digest," published by Institute of Textile Technology, Charlottesville, Va.

Can You Run A Lemonade Stand?

"If available, I would be very glad to have about 25 reprints of the



This is an unretouched photograph.

NEW! A CATIONIC STARCH

An entirely new concept is shown in the above electrophoresis cell. The cloudy mass about the cathode is National's CATO®—the first cationic starch for textiles.

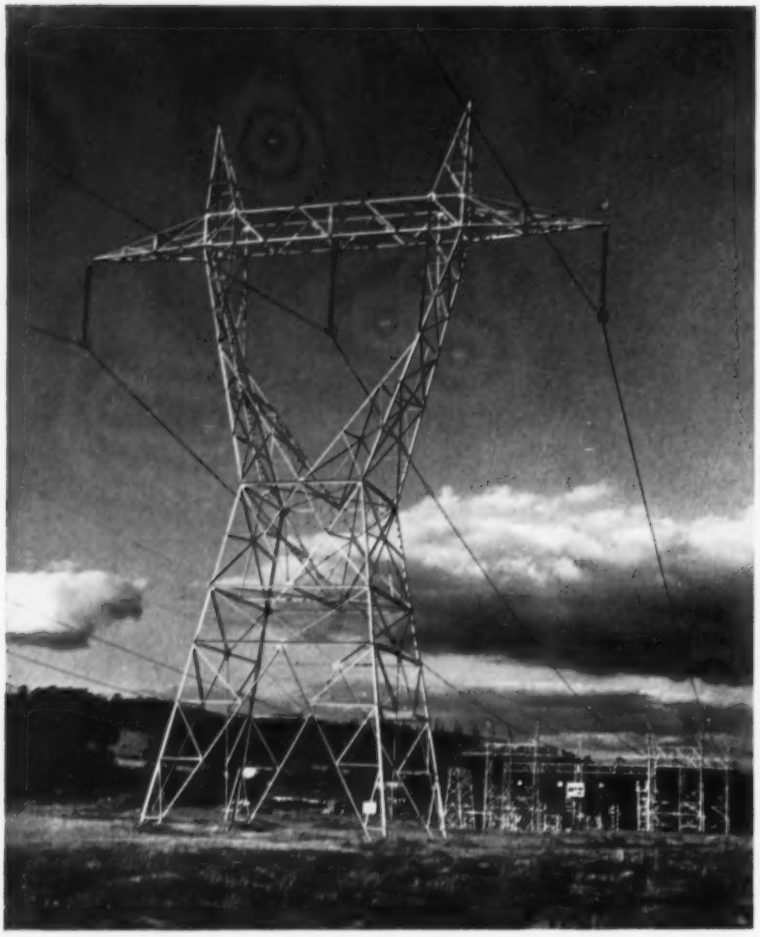
CATO carries a cationic charge as an integral part of its polymeric structure. The result? A strong electrochemical affinity for negatively charged fibers—as proved by CATO's migration under applied potential to the cathode of the electrophoresis cell.

CATO shows unusual promise as a warp size for cotton, wool, Fiberglas, viscose and other synthetics. Preliminary tests strongly indicate less shedding, greater tensile strength and improved weaving. Moreover, CATO may well offer other striking advantages in printing and finishing.

Sound interesting? We'll be glad to supply trial quantities and have one of our textile specialists demonstrate in your plant.

National
STARCH PRODUCTS INC.

270 Madison Avenue, New York 16 • 3641 So. Washtenaw Avenue, Chicago 32 • 735 Battery Street, San Francisco 11



ELECTRICITY...

Electricity is defined as one of the fundamental quantities in nature, but NOBODY knows what it is.

One thing for sure, though . . . it's the lifeblood of your mill. Kind of like a woman—impossible to understand but *absolutely essential.*

That's why it's so important to select the *best* electrical contractor for your mill . . . and this means J. M. CLAYTON CO. You'll hear the name mentioned wherever electrical contracting is being discussed.

SERVING THE TEXTILE FIELD FOR 51 YEARS

J. M. CLAYTON CO.

CONTRACTING ELECTRICAL ENGINEERS

ATLANTA, GEORGIA

Shorts and Remnants

article 'Can You Run a Lemonade Stand?' (May '57) . . . "

SAMUEL L. HAYES
Sou. Mgr.
Ciba Co., Inc.
Charlotte, N. C.

Mills Using Textile Workers' Buying Power Chart

"We would greatly appreciate two (2) large size reprints. . . "

ALICE KASKY
Lacon Woolen Mills
Lacon, Ill.

"Kindly send us one copy. . . "

R. H. CHASE
Mgr.
Wm. P. Musselman
Newtown, Pa.

"Please send . . . for use on bulletin board."

BYRNES BUTLER
Personnel Director
Bemis Bros. Bag Co.
Bemis, Tenn.

"Please send me a large reprint. . . "

EMERSON E. TUCKER
Denison, Tex.

► A table, comparing buying power of Russian, English, and American textile workers, appeared in TI for April '57, p. 113. Reprints in chart form suitable for posting on mill bulletin boards were offered. Demand for it necessitated a second printing.

Tufted Textiles

" . . . We would like to receive ten additional copies of "Tufted Textiles —1956" [June, 1956]. . . "

R. W. McCULLOUGH
Sec.
Deering Milliken Research Corp.
Pendleton, S. C.

► We now have reprints of "Tufted Textiles—1957" from June issue this year.

"Purchasing" Interesting

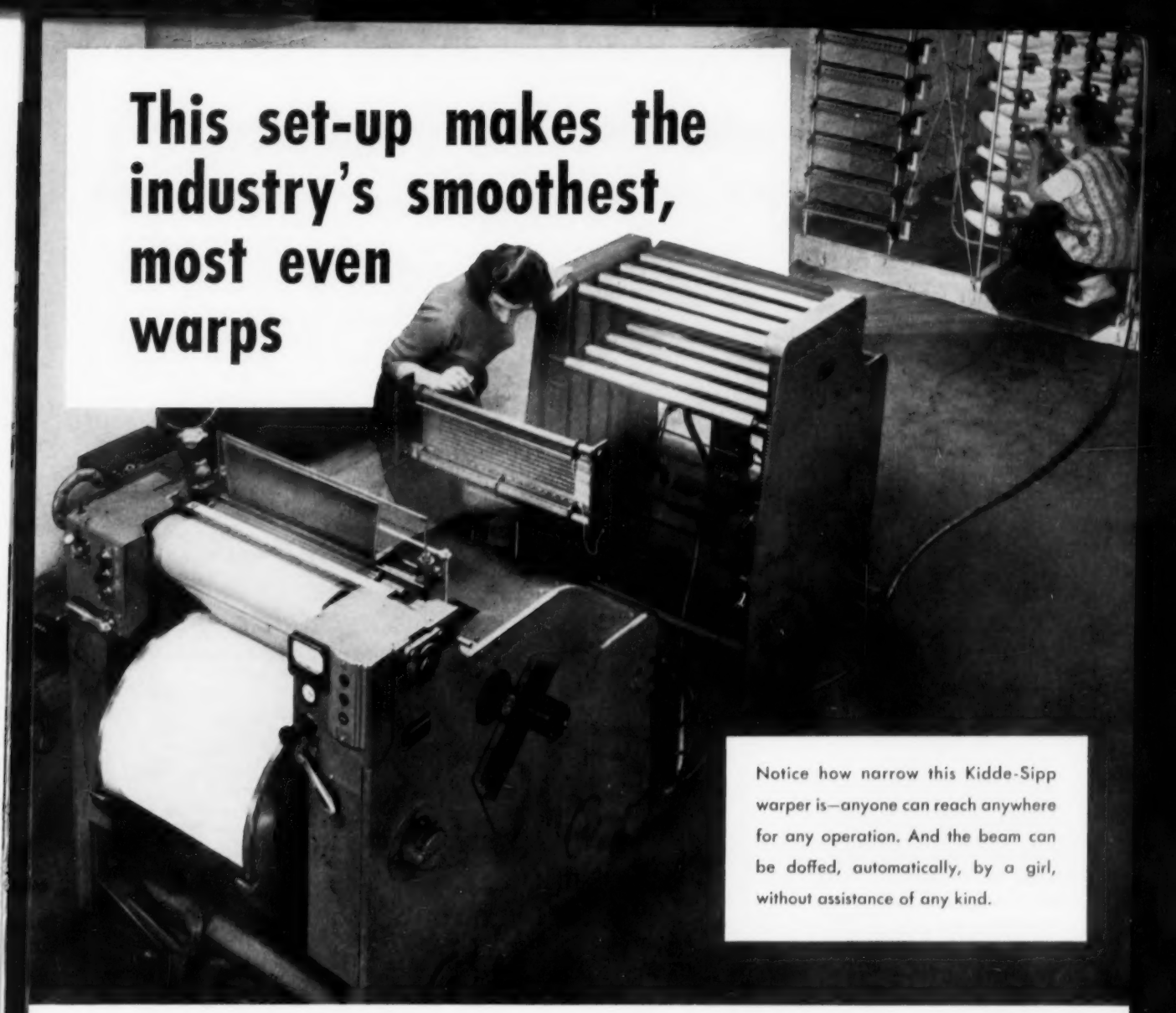
"May I please have (2) reprints of your interesting article on Purchasing (Feb. '57) . . . "

FRED GOLDEN
United Merchants & Mfrs., Inc.
New York, N. Y.

His Favorite Textile Magazine

" . . . TEXTILE INDUSTRIES is my favorite textile magazine—the one I

This set-up makes the industry's smoothest, most even warps



Notice how narrow this Kidde-Sipp warper is—anyone can reach anywhere for any operation. And the beam can be doffed, automatically, by a girl, without assistance of any kind.

it's the KIDDE-SIPP warper with accumulator and creel

The smoothest, most even warp beams available today are being turned out by Kidde-Sipp warpers . . . particularly when backed up by a Kidde-Sipp accumulator and a Kidde-Sipp Creel. Here's why:

Yarn is never scuffed on the warper because brakes on the measuring roll, compression roll, and beam are all synchronized electrically. Furthermore, yarn builds up evenly because the compression roller has 2 hydraulic cylinders, one at either end (instead of just one in the center). The balanced pressure that results gives you perfectly even build-up of yarn. And the hydraulic cylinders produce uniform cushion pressure so that the compression roller will not chatter or bounce.

The accumulator is electrically synchronized with the warper, so that, when the yarn must be backed off to recover a broken end, proper tension is maintained. And even the heaviest packages won't sag out of alignment on the versatile Kidde-Sipp Creel. New, stronger package holders and adapters are the reason. They are made of aluminum, which also puts a stop to rust rubbing off on the yarn.

There are a lot more reasons why you get a better beam with Kidde-Sipp Warpers, Creels and accumulators. Find out more about them by writing to:

TRICOT AND RASCHEL MACHINES • TRICOT WARPERS • HORIZONTAL WARPERS • BEAMERS
CREELS • SLASHERS • WINDER-REDRAWS • TENSOMETERS • TENSION COMPENSATORS

Kidde

MANUFACTURING CO., INC. — 42 FARRAND STREET — BLOOMFIELD, NEW JERSEY

SOUTHERN OFFICE — 267 W. MAIN ST., GASTONIA, N. C.

The word KIDDE is the trademark of Walter Kidde & Company, Inc., and its affiliated companies.

SODIUM HYDROSULFITE
TC HYDRO
TENNESSEE CORPORATION
CONCENTRATED

As miners of Sulfur Bearing Ores, we are now producing another Basic Sulfur Textile Chemical, **TC HYDRO** for the Southern Textile Industry.

SPEEDY DELIVERY SERVICE

Our location in the heart of the Southern textile industry, permits us to render overnight truckload service to most Southern textile plants. Small lot shipments are available from centrally located warehouses.

DEPENDABLE SUPPLY

Long a trusted source of Sulfuric Acid, Sulfur Dioxide, Organic Sulfonates and other textile chemicals, we are utilizing our know-how and basic position in Sulfur Chemistry to produce another quality product for the textile industry.

TC
TENNESSEE CORPORATION

HIGHEST QUALITY

TC HYDRO is a dry, white, free flowing, crystalline powder of uniform size and structure. It is dust-free, assuring highest stability and uniformity.

Phone, wire or write for literature and test samples if desired.

TENNESSEE TC CORPORATION
617-629 Grant Building, Atlanta, Georgia

Shorts and Remnants

would recommend to all textile men, both young and old. . . ."

HOWARD BARTON
Secretary
N.N.C-Va. Div. STA.

Chemicals Used

". . . Kindly advise whether such chemicals as Armour Company's Armeen, Armide, Ethomeen, Armowax, Arquad or General Mills' Alamine are used to a great extent by the textile industry or direct me to a source where I can obtain this information. . . ."

W. P. TER HORST
Pikesville, Md.

► Two pretty good sources would be Armour and General Mills.

Excellent

". . . I have just seen your May issue and your story, 'A Job Is A Partnership At Avondale Mills.' . . . thought it was excellent."

J. CRAIG SMITH
Pres. Treas.
Avondale Mills
Sylacauga, Ala.

Flammable Fabrics

"Will you please send us six (6) copies . . . 'Flammable Fabrics Act' [Oct. '53] . . ."

J. ROLAND BROWN
Sales Mgr.
National Plastic Products Co.
Odenton, Maryland

► Effective with the January, 1958, issue, TI will be indexed in the "Applied Science and Technology Index," which is published by The H. W. Wilson Co., 950 University Ave., New York 52, N. Y.

► In case you are interested in celestial journeys (alive, of course) or travel into space, a hot news release from Birmingham, Ala., tells of a two-day conference on "The Age of Space" sponsored by Southern Research Institute. Seems that ". . . the frames and skins of space vehicles will have to be built of something better than magnesium or aluminum alloys. . . ." S & R will second that. In fact, we won't even buy a ticket unless said vehicle is built of celestial timber.

► And remember on July 4 and all other days "at 65 miles an hour you're not driving a car—you're aiming it."

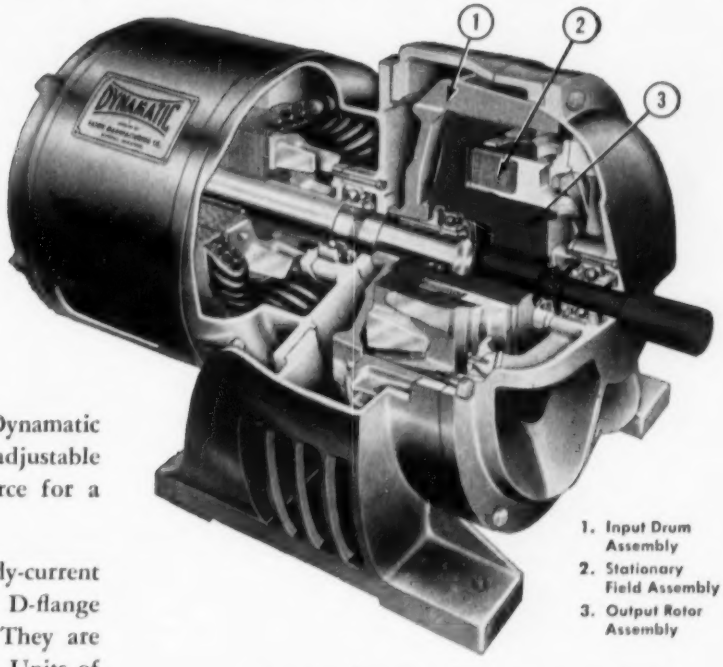
► So long until August.

Infinitely Adjustable Speed from an AC Source with the NEW

EATON

DYNAMATIC®

Ajusto-Spede® Drives



1. Input Drum Assembly
2. Stationary Field Assembly
3. Output Rotor Assembly

The newly announced stationary field Dynamatic Ajusto-Spede® Drives provide stepless adjustable speed from an alternating current source for a wide range of industrial applications.

These air-cooled, stationary field eddy-current couplings are mounted integrally with D-flange open drip-proof squirrel cage motors. They are available in capacities from 3 to 75 HP. Units of the same design and capacities are also available without motors.

This new stationary field design eliminates the use of rotating coils, brushes, slip rings, and commutators, holding wear and maintenance to an absolute minimum. Dynamatic electronic or magnetic amplifier controls, in combination with these drives, provide wide latitude in operating functions.

Investigate these Important Ajusto-Spede® Drive Advantages:

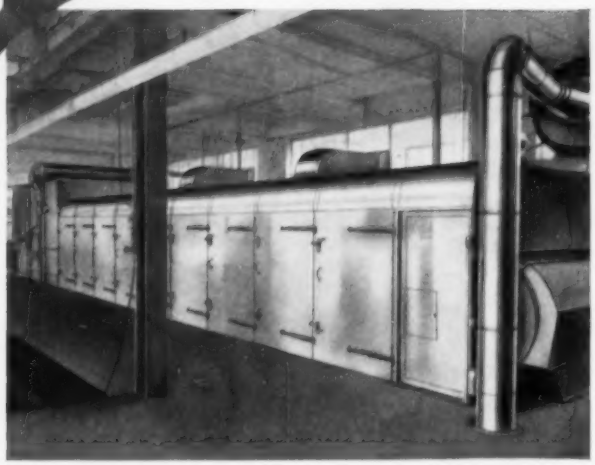
Accurate speed control • Wide speed range
Low power losses • Simple construction
Rapid response • Low maintenance cost
Quiet, efficient operation • Remote control

Send for Illustrated Literature Describing these New Stationary Field Drives

EATON

DYNAMATIC DIVISION
MANUFACTURING COMPANY
3307 FOURTEENTH AVENUE • KENOSHA, WISCONSIN

HOW TO COUNT YOUR PROFITS



Full height hinged panels for economy in cleaning and maintenance

and here's how much

Completely automatic operation through feed, squeeze rolls and dryer

Increase production 33%—Decrease labor cost more than 33%

Figures comparing one year's operation of new SARGENT DRYING EQUIPMENT with older machines, show considerable savings in dollars and cents, *plus* better quality work.

HERE ARE THE FIGURES:

	Older Equipment	*New SARGENT Equipment*
Machines:	1 conventional feed 2 centrifugal extractors 1 8-section dryer	1 rotary-type feeder 1 pneumatic squeeze roll 1 8-section dryer
Operated:	7 days a week 3 shifts a day	5 days a week 2 shifts a day
Production:	350 lbs per hour	1,000 *up*, lbs per hour

And more uniform drying, day in, day out, with the new SARGENT machines. Whether you work with cotton or wool or synthetic fibres,

How much per pound savings would this mean to your mill?

C. G. SARGENT'S SONS CORPORATION

Graniteville, SINCE 1852 Massachusetts

PHILADELPHIA 19 — F. E. Wasson, 519 Murdock Road
CINCINNATI 15 — A. L. Merrifield, 730 Brooks Avenue
CHARLOTTE, N.C. — W. S. Anderson, Carolina Specialty Co.
ATLANTA, GA. — J. R. Angel, Mortgage Guarantee Building
TORONTO 1, CAN. — Hugh Williams & Co., 27 Wellington St. East

Personal NOTES

ABOUT MEN YOU KNOW

At Clemson (S. C.) College commencement ceremonies, honorary doctor of textile degrees were conferred upon **Dr. Malcolm Eugene Campbell,** dean, North Carolina State College School of Textiles, and **Fred Taylor,** retired agricultural commissioner for the state department. Both were formerly professors of textiles at Clemson. Retiring from the school of textiles is **Dr. Hugh M. Brown,** dean, who plans to devote his time to textile and other types of research. A successor has not yet been named.

Frank C. Mawby, formerly president of Bates Manufacturing Co., Lewiston, Maine, has been elected a vice-president of Bigelow-Sanford Carpet Co., Inc., New York, N. Y., and assigned to head the company's Hartford Rayon Division at Rocky Hill, Conn. **Ralph A. Rhodes,** who has

Mr. Mawby **Mr. Rhodes**

been general manager of the company's Georgia Rug Mill, Summerville, Ga., has been elected a vice-president with the assignment of heading the Sanford division, administrative and sales organization for the company's distributor line of Sanford carpets.

William Cruickshank has been promoted from superintendent of finishing at Bradford (R. I.) Dyeing Associates to plant superintendent, succeeding **Ernest J. Chornyei** who has moved to the New York office.

At Cone Mills Corp., Greensboro, N. C., **John W. Bagwill,** director of industrial and public relations, and **Percy C. Gregory, Jr.,** assistant vice-president of the company and general manager of Union Bleachery, Greenville, S. C., have been named vice-presidents. **C. Edward Connelly,** for-

(Continued on page 26)

FULL SIZE 12" x 7" PACKAGE

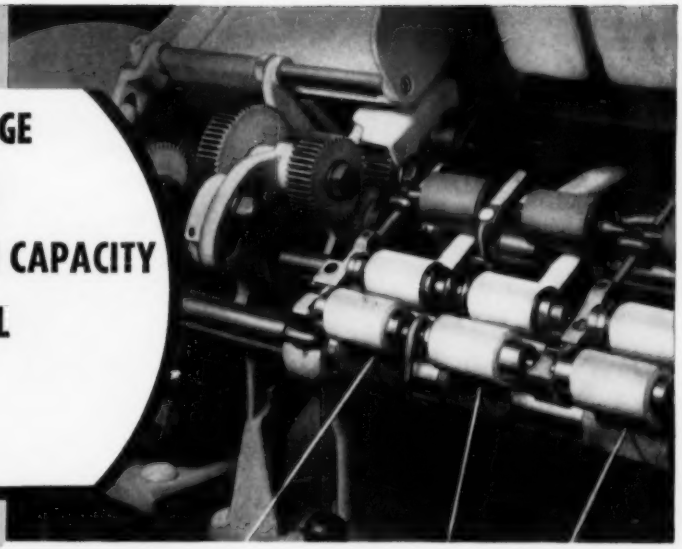
UNEQUALLED PRODUCTION

37% INCREASE IN BOBBIN CAPACITY

MAXIMUM FIBRE CONTROL

HIGHEST EFFICIENCY

COMPLETE VERSATILITY



* Net weight varies with bobbin dimensions, twist constant, density of stock, hank roving, the lay, and other local conditions.

A few of the reasons why SACO-LOWELL FS-2 ROVING FRAMES with JUMBO CONES are now more than ever, first choice of the discriminating mill seeking highest quality at lowest cost

Built on a 10¼" gauge, it produces a full size 12" x 7" bobbin weighing more than 78 ounces*, an increase of 37% over conventional 12 x 6 frames.

With the proper stock and suitably prepared drawing, roving, with a C.V. of under 6.00 is a continuing achievement of FS-2 Roving Frames.

•

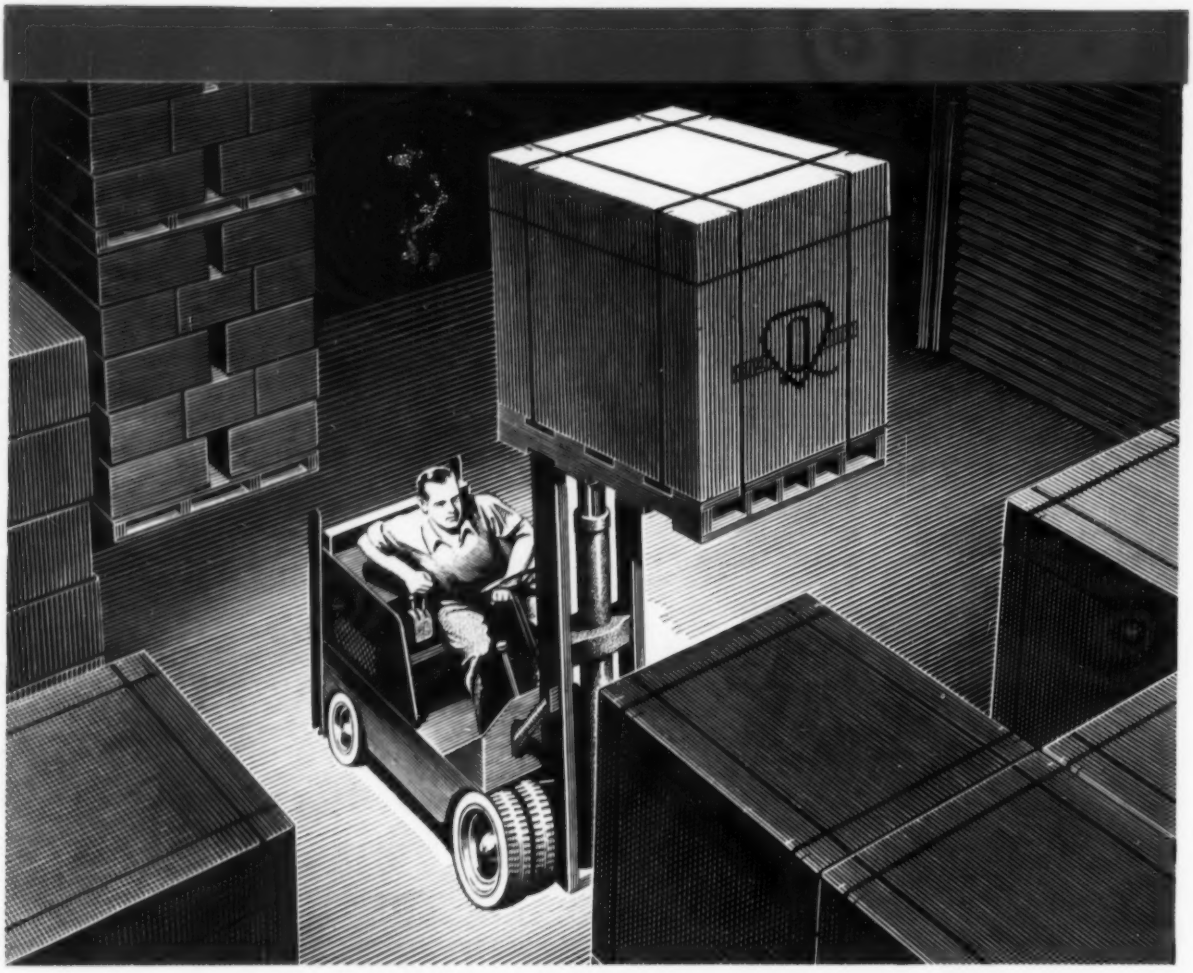
In this highly competitive era, this period of rising costs and dwindling profits, it is imperative that mills spend money only for machinery that produces a result to justify the expenditure — machinery that helps pay for itself through higher production, lower costs and improved quality. Mills everywhere tell us that Model FS-2 Roving Frames do just that — every test against competitive equipment proves it — ever increasing orders for FS-2 are the end result.

A Saco-Lowell engineer will be glad to arrange a demonstration and show you the mill proven figures. Compare FS-2 performance.

SACO-LOWELL SHOPS

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD & SACO, MAINE; SANFORD, N.C.; EASLEY, S.C. Sales Offices: CHARLOTTE · GREENSBORO · GREENVILLE · ATLANTA



Help your product "STACK UP" BETTER

Gaylord Boxes

In the warehouse you'll save valuable space because precision-made Gaylord Boxes stack solid, straight...and taller.

In shipment your products will "stack up" better in the eyes of all who see them when they're dressed in eye-catching Gaylord containers.

On arrival your products will "stack up" best; for protection-engineered Gaylord Boxes deliver them in the same good condition in which they left your plant.

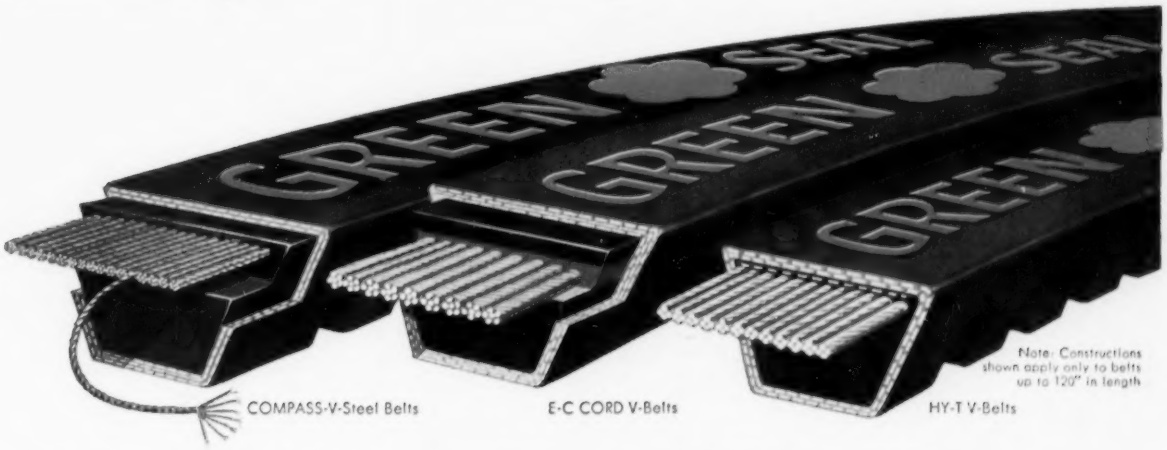
Stack the cards in favor of your product. Call your nearby Gaylord sales office today!

CORRUGATED AND SOLID FIBRE BOXES • FOLDING CARTONS • KRAFT PAPER AND SPECIALTIES • KRAFT BAGS AND SACKS

GAYLORD CONTAINER CORPORATION ★ ST. LOUIS

DIVISION OF CROWN ZELLERBACH CORPORATION

Now—V-Belts with the Green Seal solve the major multiple drive problem



The Green Seal stands for true dimensional stability in V-belts. And with Green Seal dimensionally stable belts you can be sure that matched sets are truly matched and will stay matched—that mismatching (the biggest problem in belting multiple drives successfully) is a thing of the past.

The key to dimensional stability lies in the tension members of the belt. For many years, steel cables as developed by Goodyear were the only length stable load carriers, but now they have been joined by synthetic cords, thanks to the amazing Triple-Tempered 3-T process.

The 3-T process is an exclusive method of tempering the cord with Tension, Temperature and Time for maximum strength and minimum change in dimensions. This assures no change in length during storage plus greatly increased shock- and stretch-resistance on the drive.

The end result is smoother, longer-running teams of belts that give you maximum, trouble-free, horsepower hours at minimum cost. What better reason for specifying V-belts with the Green Seal?

DIMENSIONALLY STABLE V-BELTS with the GREEN SEAL by

GOODYEAR

THE GREATEST NAME IN RUBBER

The Goodyear Tire & Rubber Company, Industrial Products Division, Dept. 794, Akron 16, Ohio

Please send me more information about how V-Belts with the Green Seal solve the major problem in belting multiple V-belt drives.

Name_____

Company_____

Street Address_____

City_____ **Zone**_____ **State**_____

Compass, E-C Cord, Hy-T, Green Seal—T. M.'s The Goodyear Tire & Rubber Company, Akron, Ohio

Why The Manager Of Engineering In This Plant Selected TRUSCON COATINGS

FLOORS, MACHINES, WALLS AND CEILINGS AND EXTERIOR OF THIS PLANT ARE TRUSCON PROTECTED . . . EACH BY A SPECIALIZED COATING DESIGNED TO PROVIDE MAXIMUM WEAR AND PROTECTION

By following the Truscon consultants' recommendations, the Purchasing Agent and Plant Engineer in this plant know that each piece of property and equipment receives the best protection that modern paint chemistry can offer.

Because of Truscon Laboratories' nearly 50 years experience and reputation in the field of specialized maintenance coatings, you, too, can rely on:

TOP QUALITY . . . Finest ingredients and best techniques of formulating characterize all Truscon products.

DEPENDABLE PERFORMANCE . . . All Truscon products undergo exhaustive field testing for wear, weathering, color retention and coverage, before they are placed on the market.

GOOD SERVICE AND FAST DELIVERY . . . A Truscon factory branch in your area assures complete inventories and trained personnel—immediate delivery and service are available to you at all times.

FREE CONSULTATION . . . Truscon consultants are factory trained in the proper selection of specialized coatings for all conditions—alkaline, acid, rust, moisture, etc., and are at your disposal at all times for consultation with your own staff.

Call your Truscon representative today for an "on the spot" demonstration of Truscon products under your exposure conditions.

TRUSCON Laboratories
Industrial Maintenance Division of Devoe & Raynolds Co., Inc.
Detroit 11, Michigan

Personal NOTES
ABOUT MEN YOU KNOW

(Continued from page 22)

merly assistant comptroller, has been promoted to the position of comptroller. * * * Following a two-year period of service in the U. S. Army, **Zeddie L. Collins** has returned to Union Bleachery where he has been assigned responsibilities of assistant supervisor of continuous dyeing. **Lewis Frank O'Sheal,** formerly head machine operator, has also been made an assistant supervisor of continuous dyeing.

On the occasion of the 91st annual meeting of the Underwear Institute, which was held recently in Atlantic City, N. J., **Roy A. Cheney,** president retired after having served the organization for 38 years. As guest of honor at the Institute's annual banquet, Mr. Cheney heard many industry leaders, and government officials as well, pay tribute to him for the services he rendered. Successor to Mr. Cheney is Robert D. McCabe (see

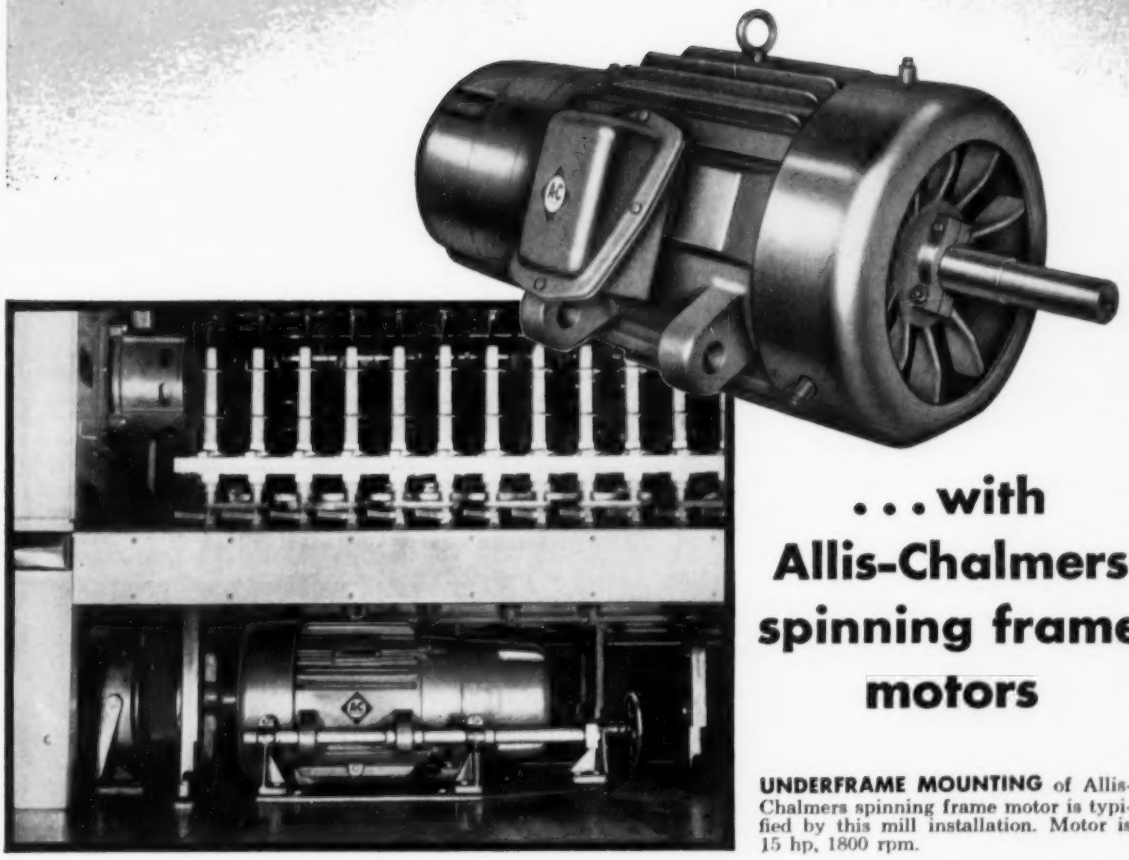
Mr. Cheney

TI for May, 1957, p. 23) who was elevated from the post of secretary. Mr. McCabe's title is managing director, and the elected head of the Institute is now designated president, rather than chairman; this represents a return to the organization's former practice. All officers were re-elected. They are **Robert F. Gregory** of H. E. Bradford Co., president; **Thomas D. Russell** of Russell Manufacturing Co., **Ed. L. Gruber** of Spring City Knitting Co., **George D. McConnell** of Munsingwear, Inc., and **James J. Nields** of Ware Knitters, Inc., all vice-presidents; and **F. R. Devereaux,** Oneita Knitting Mills, treasurer.

At Fair Lawn-Richmond Finishing Co., Fair Lawn, N. J., the new post of executive vice-president has been filled by **Weldon G. Helmus,** who is succeeded as vice-president in charge of the Fair Lawn division by **Harry**

(Continued on page 28)

Get MORE yarn output



. . . with Allis-Chalmers spinning frame motors

UNDERFRAME MOUNTING of Allis-Chalmers spinning frame motor is typified by this mill installation. Motor is 15 hp, 1800 rpm.

HERE'S a textile motor that will keep yarn moving on the newest spinning frames. It's the Allis-Chalmers air-cooled motor with totally-enclosed, deep-rib type construction.

Specially designed for underframe mounting, this motor is built to stay on the job even in the most lint-laden atmosphere. Here's why:

No lint can collect on the streamlined frame because a powerful air blast, directed over the motor surface from the large fan, continually sweeps all the exterior surfaces of the motor clean.

Double-shielded bearings are greaseable while in service. Frames need not be shut down for lubrication.

Cast-iron construction of frame, bearing and fan housings holds alignment true . . . adds to continuity of operation.

Belt tension adjustment is made easy by a convenient four-lug mounting.

Find out more about A-C spinning frame motors from your nearest sales office or distributor, or write Allis-Chalmers, General Products Division, Milwaukee 1, Wisconsin. Ask for Bulletin 51S8336.

A-C ALLIS-CHALMERS

A-5288

ALLIS-CHALMERS

Woolen and worsted textile machinery

★ **PREPARATORY MACHINERY**

Automatic Box Dusters — Cone Dusters
Ceiling Condensers — Heavy Shredders
Automatic Oilers — Rag Pickers
Fearnaught Pickers — Mixing Pickers
Wool and Rayon Openers — Burr Pickers

Pickers for every purpose

A complete line of accessories, supplies and maintenance parts.

CARD CLOTHING
GARNETT WIRE
NAPPER CLOTHING
CONDENSER TAPES
RUBB APRONS

★ **CARDING MACHINERY for**

Woolen, Worsted, Asbestos, Rayon, Felt and Waste
Bramwell Feeders — Sample Cards — Garnett Breasts
Tape Condensers, *Single and Double Apron*, Balling Heads, Grids or Screens, Can Coilers, Machines for Mounting Card Clothing, Doffer Combs, Waste End Conveyors, Card Grinders, Center-Draw Broad Band Intermediate Feeds, Burr Removers.

The skillful integration of Davis & Furber methods, materials and machinery with your mill results in "CO-ORDINATED PRODUCTION." It means increased profits for you. Ask us for information on this. Send for copy of the D&F News to help with your planning.

★ **SPINNING AND YARN MACHINERY**

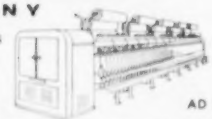
Spinning Frames for Wool, Shoddy, Cotton, Rayon and Mixtures, Spinning Frames for Carpet Yarns, Standard Type and Large Package Mules, High Speed Warp Spoolers, Warp Dressing Frames, Beamers, Warp Compressors, High Speed Warping Systems
Reels, *Pin or Pinless* • Dresser Creels • Skein Reels

★ **FINISHING MACHINERY**

Single and Double Acting Nappers for Wool, Rayon, Worsted or Cotton Goods, Woven or Knitted.
14, 20, 24, 30 and 36 Rolls
Napper Grinders — Chinchilla Machines

DAVIS & FURBER
MACHINE COMPANY

TEXTILE MACHINERY DESIGNERS AND MANUFACTURERS
North Andover, Mass.
Charlotte, North Carolina



AD 12-3

CARDS • SPINNING FRAMES • PREPARATORY MACHINERY • WARP DRESSING MACHINERY • FINISHING MACHINERY
MACHINERY MODERNIZATION • ACCESSORIES, SUPPLIES, CARD & NAPPER CLOTHING, GARNET WIRE, TAPES & APRONS
SPARE PARTS • TECHNICAL SERVICE & CONSULTATION

Personal NOTES ABOUT MEN YOU KNOW

Moore. Mr. Helmus is also treasurer, succeeding the late Charles Weber. **William H. Kramer,** head accountant, was named secretary succeeding Mr. Weber in that office. **Lillian L. Grosch** was appointed assistant treasurer. **Charles F. Weber,** vice-president in charge of the Richmond division, was appointed to the board to succeed his father.

Bates Manufacturing Co., Lewiston, Maine, announces the appointment of **Edwin J. Hodgins** as director of technical service. Mr. Hodgins, who was formerly research engineer for Bates, replaces William G. Fash who has resigned.

Newly named assistant to Fred Phillips, president of Buck Creek Cotton Mills, Siluria, Ala., is **Julius E. Chapman,** formerly vice-president and treasurer of Alabama Mills.

Herman D. Ruhm, Jr., formerly with Burlington Industries, has been elected president of Wellington Sears Co., succeeding **T. Scott Avary** who was elected vice-chairman of the

Mr. Avary

Mr. Ruhm

board. Mr. Avary will continue as a director of Wellington Sears, as well as of other properties, and will make his headquarters in New York.

At the Calumet plant of Callaway Mills Co., LaGrange, Ga., **Vance Sanders,** supervisor of designing and development, has been named plant engineer, and **William "Boots" Knight,** formerly second hand, has assumed new duties as overseer sewing. **Allen T. Adams,** previously plant designer for J. P. Stevens & Co., Inc., is now Elm City plant engineer.

Martin Processing Co., Inc., Collinsville, Va., is under the management of **Julius Hermes,** who recently resigned as vice-president and general manager of the Fontaine Converting Works, Inc., Martinsville, Va., to devote full time to the firm which

Need New Pickers?

. . . then think of what you get in

NEW ALDRICH PICKERS!

✓All spur gears are cut instead of having rough cast teeth.

✓Many gears are cut steel where other pickers have rough cast, or malleable iron gears.

✓Ball bearings are used wherever practicable, and in places not used on any other pickers. Oilite bearings are used at most points where ball bearings can not be employed. The extensive use of ball bearings and Oilite bearings eliminates practically all routine lubrication.

✓Self-aligning, permanently lubricated ball bearings are used on screen shafts. They never require attention, and never create the oily chokes occurring with plain oil bearings.

✓Self-aligning Oilite draw roll bearings can be installed in a few minutes, and lubricated every few months.

✓A more sensitive evener, with:

A new weighting method which keeps moving parts under tension and eliminates lost motion

Ball bearing rollers to guide the scale motion in the evener case to keep the scale in perfect alignment and prevent binding against the case

A round sliding stem in an Oilite bushing in the evener case instead of the old rectangular stem without lubrication

An improved evener case, more nearly dust tight than older models

✓A really silent sideshaft drive to the evener. This drive is mounted wholly on ball bearings and provides for any necessary speed changes to take care of different lap weights.

✓The Aldrich Synchronizer, which makes it possible to produce a lap from a lap, instead of merely breaker laps for the cards, as is done on most other single process picking systems.

✓A completely redesigned calender containing so many new features that these will be described in a future advertisement.

AldricH MachinE WorkS

Greenwood, South Carolina

SPARTAN MILLS USE LIFT TRUCKS TO CASH IN ON "FREE AIR SPACE"

SPARTANBURG, S. C.—Spartan Mills take full advantage of their high warehouse ceilings to sharply reduce storage costs and improve operating efficiency.

Using Hyster 2000 lb. and 4000 lb. capacity lift trucks, loom beams, flat cloth bolts, cloth rolls and cotton bales are stacked in the "free air space"—utilizing convenient storage space that had been previously wasted. Costly yard space and the necessity of purchasing additional warehouse space have been eliminated.

Awkward, heavy hand-labor jobs, such as moving looms, unloading bales from trucks and in-plant hauling are handled up to five times faster with the two Hyster Lift Trucks. Replaced manpower has been diverted to more productive operations.

Your Hyster Dealer makes it his business to keep up with the materials handling problems of the textile industry. He is able to help *you* make important materials handling savings. Call him today.

ABOVE: Bales are stacked five high, three bales at a time, utilizing space near ceiling.

LEFT: Hyster 2000 lb. capacity Truck unloads incoming cotton bales two at a time.

Call your Hyster Dealer. He is in the yellow pages under "Materials Handling" or "Trucks-Industrial"

HYSTER COMPANY

Hyster Industrial Trucks Reduce Costs for Textile Mills

Factories: PORTLAND, OREGON
DANVILLE, ILLINOIS
PEORIA, ILLINOIS
NIJMEGEN, THE NETHERLANDS

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 28)

he and a partner set up to dye polyester film. Mr. Hermes has also formed Hertaine, Inc., in Martinsville to license the Hertaine dye process to other wet processing firms. **Walter Knoepfel,** formerly superintendent at Fontaine, has been named resident manager succeeding Mr. Hermes.

At American Finishing Co., Memphis, Tenn., new vice-presidents have been named as follows: **Charles H. Tapp, Herbert Rosenberg,** and **Werner L. Simon,** in charge of finishing, coating, and sales respectively; and **James O'H. Finlay** has been made vice-president and secretary.

New vice-president in charge of manufacturing for Hightstown (N. J.) Rug Co. is **Fred T. Davies** who just

Mr. Davies

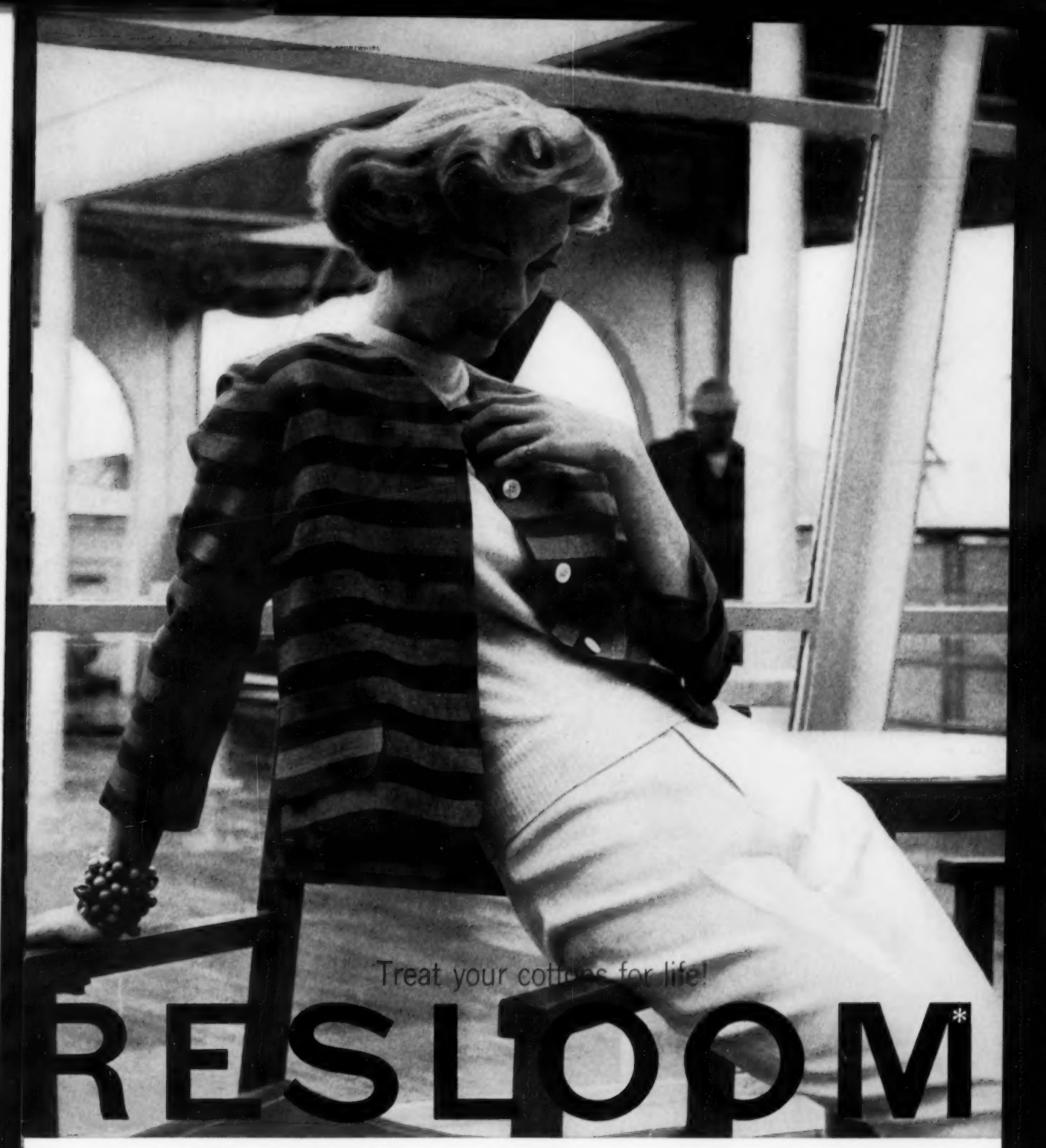
prior to his present appointment was plant manager for the company's new All America velvet mill.

Robert A. Harris, vice-president manufacturing, Fieldcrest Mills, Inc., Spray, N. C., has been named president of the Carolina Cooperative Council. * * * New assistant manager of the towel mill at Fieldale, Va., is **Arthur L. Jackson.**

New manager of the Firth Carpet Co., Burnsville, N. C., is **Ted C. Balou,** formerly yarn mill superintendent at the company's Firthcliffe, N. Y., plant.

At an election of officers of the Canadian Association of Textile Colourists & Chemists, **Dr. C. E. Coke,** development manager, Courtaulds (Canada) Ltd., Montreal, was named president of the group, succeeding **Leon E. Moody,** Dublin (Va.) Finishing Co. Other officers chosen were: **S. H. Chambers,** Montreal Cottons, Ltd., Valleyfield, Que., and **John**

(Continued on page 188)



Monsanto E-50 cyclic urea resin gets inside fibers . . . won't wash out!

MONSANTO

*RESLOOM: REG. U. S. PAT. OFF.

Resloom E-50 doesn't coat the fabric. This cyclic urea resin "joins" it, penetrating into the fibers—actually modifying fiber characteristics. Repeated laundering can't shake the finish loose. Resloom-treated cottons require little ironing, stay crush resistant, won't shrink, sag, or stretch. Resloom finishes can be accurately controlled to create a wide variety of hand—from soft and full to firm and crisp.

Call in Monsanto for expert counsel on how to "treat your cottons for life." In addition to Resloom E-50, Monsanto also supplies melamine finishing resins, tradenamed Resloom HP and M-75. Also AC Catalysts for stepping up curing efficiency. For technical bulletin and experimental samples, write Monsanto Chemical Company, Plastics Division, Room 1888, Springfield 2, Massachusetts.

Precision-made Accotex Aprons keep yarn quality high

The higher drafts and faster speeds of modern spinning frames make it more important than ever to use an apron that's engineered for the job. That's why hundreds of mills have specified Armstrong Accotex® Aprons.

These aprons . . . like the equipment they run on . . . are precision made to give you the smooth drafting action and superior yarn control so necessary to high-speed production.

A major reason for this performance is that each Accotex Apron is identical in every respect . . . in size, in frictional qualities, flexibility, and abrasion resistance. As a result, these aprons fit snugly and run smoothly on high-draft frames.

The special synthetic rubbers used in Accotex Aprons are precision made, also. The compounds used for the inner and outer surfaces are specially tailored for the different jobs each must do.

For example, the inner—or white—layer must be smooth enough to slip over the pins freely, yet it must have the right friction to grip the drive roll firmly. Special electrolytes added to this compound help to prevent the accumulation of loose fibers on this inner surface.

The black outer surface is designed to resist abrasion and tearing and has enough friction to keep the top apron spinning smoothly without slipping.

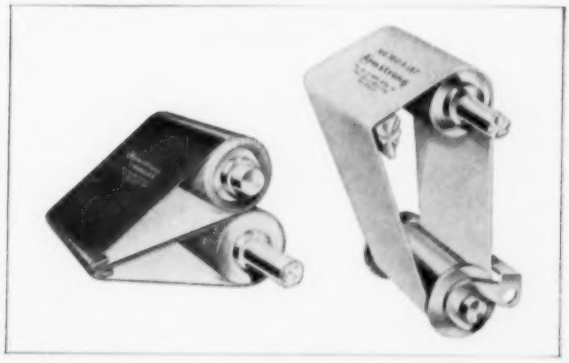
These careful manufacturing methods, backed by rigid quality control and inspection standards, are your assurance that the Accotex Aprons you buy will help you get the best spinning performance . . . shift after shift . . . from your high-draft frames.

If you're not already using Accotex Aprons, ask your Armstrong man to arrange a test next time he calls. Or write for more information to Armstrong Cork Company, Industrial Division, 6407 Ivy Street, Lancaster, Pennsylvania.

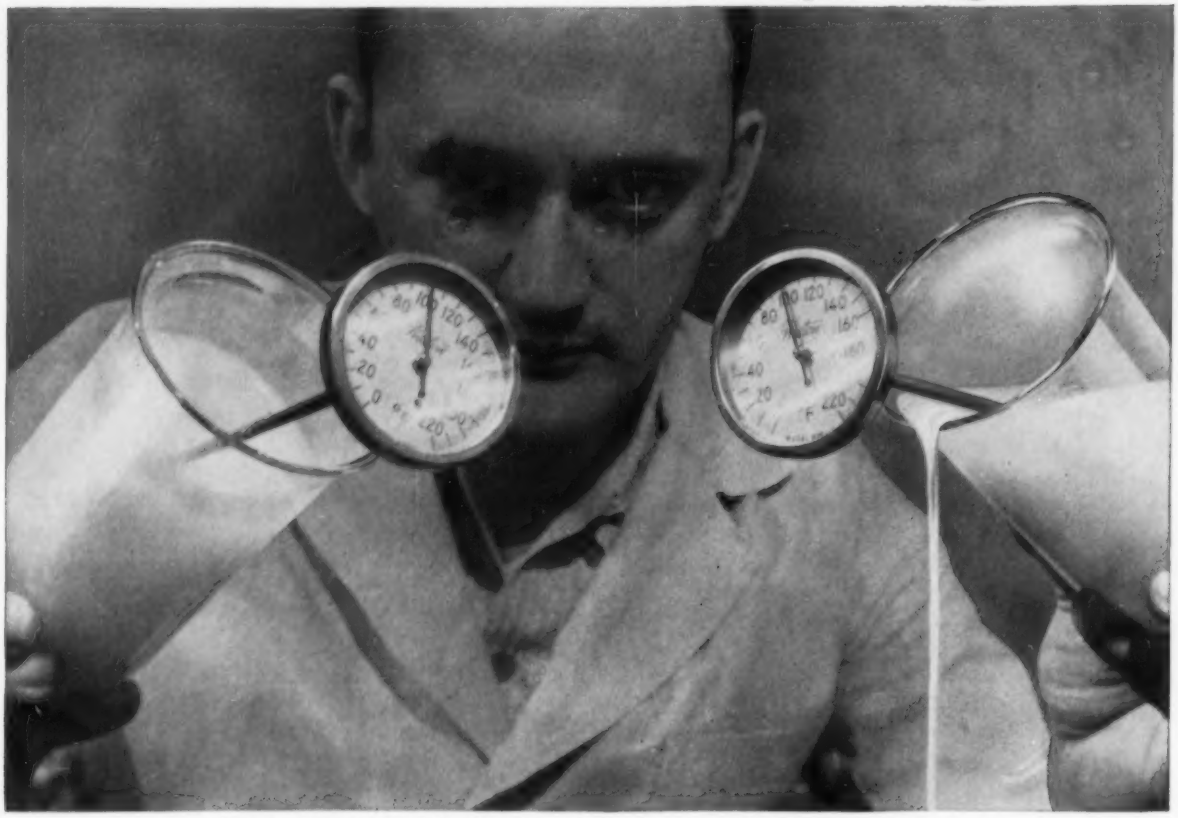
Armstrong ACCOTEX APRONS

. . . used wherever performance counts

FOR DOUBLE-APRON SPINNING, use Accotex NO-7075 Aprons. Inner surface grips drive roll firmly, yet slips over pins without jamming. For single-apron spinning, the NO-750 Apron gives the smooth drafting action needed for strong, uniform yarn.



C.P. Starches...Try 'em for Size



Here is a comparison of the viscosity of conventional starch (left) and Ten-O-Film.
Note that at 100°F. Ten-O-Film pours from beaker, while conventional starch has congealed.

For slashing synthetics use

TEN-O-FILM®

starches

On blends of synthetic and other fibers, you'll get greatly improved operation with Ten-O-Film Starches.

Compatible with adjuncts generally used, Ten-O-Film Starches cook completely in 30 minutes, permit warp sizing and finishing at lower temperatures. Hot paste viscosities remain stable even under conditions of prolonged heating and circulation. Fabrics are more readily desized.

Using Ten-O-Film, you save on dyestuffs, too, because lower sizing temperatures greatly reduce "bleeding", permit use of less expensive dyes. Also, the high-clarity size film produced with Ten-O-Film does not mask either dark or pastel shades.

For technical help in utilizing Ten-O-Film Starches, and engineering assistance, write to:

CORN PRODUCTS SALES COMPANY
17 Battery Place, New York 4, New York

Corn Products makes these famous products for the Textile Industry:

EAGLE® · FOXHEAD® · GLOBE® · HERCULES · TEN-O-FILM® · GLOBE® Dextrines and Gums

The Ideal Drawing *for carpet yarns*

IDEAL High Speed Ball Bearing Drawing Rolls* are today producing perfect carpet yarn sliver from 3" staple 15 denier Nylon and other synthetics combined with each other or with cotton or wool fibres. They do this at their usual high speeds without any evidence of shearing or "cockling". Ideal's exclusive construction also eliminates practically all of the static troubles usually encountered when synthetic fibres are run.

And, of course, Ideal Drawing gives you the famous Feathertouch Drafting which never crushes, cuts, or bruises even the finest fibres—and which requires no adjustments and practically no maintenance. If you produce carpet yarns—or any other type yarns—it will pay you to get the facts about Ideal High Speed Ball Bearing Drawing today.

Ideal Drawing can be furnished on complete new Ideal Frames or as replacements on any make drawing frame.

*Patent Nos. 2,610,363; 2,490,544; 2,412,357. Other patents pending

Ideal Industries, Inc.
Bessemer City, N. C.

HARSHAW** makes over **1,000 CHEMICALS
*for more than **15,000** customers in*
***50** varied industries throughout the world!*
HARSHAW CAN SERVE YOU!

HARSHAW sells chemicals —thousands of them— for these and many other industries throughout the world

Abrasives
Aeronautica
Automotive
Brick and Tile
Ceramic
Cement and Concrete
Cosmetic
Disinfectants
Electrical Manufacturing
Electroplating
Enamel
Engraving and Electrotyping
Feed Stuff, Mineral Feed
Fertilizer
Food
Glass
Insecticide and Fungicide
Laundry
Leather
Lithographing
Linoleum and Floor Covering
Lubricant
Match
Metallurgical
Metal Working
Oil Cloth
Optical
Paint, Varnish and Lacquer
Paper
Petroleum
Pharmaceutical
Photographic
Porcelain Enamel
Plastics
Pottery
Printing Ink
Pyrotechnic
Refractories
Rubber
Shade Cloth
Soaps
Textile
Veterinary Remedies
Welding Electrodes
Wall Paper

Here are typical Harshaw chemical products

Electroplating Salts, Anodes and Processes
Organic and Inorganic Dry Colors and Dispersions
Driers and Metal Soaps
Vinyl Stabilizers
Ceramic Opacifiers and Colors
Fluorides
Glycerine
Preformed Catalysts, Catalytic Chemicals
Synthetic Optical Crystals
Agricultural Chemicals
Fungicides
Chemical Commodities

THE HARSHAW CHEMICAL CO.

1945 EAST 97th STREET • CLEVELAND 6, OHIO

Chicago • Cincinnati • Cleveland • Hastings-On-Hudson, N.Y. • Houston
Los Angeles • Detroit • Philadelphia • Pittsburgh

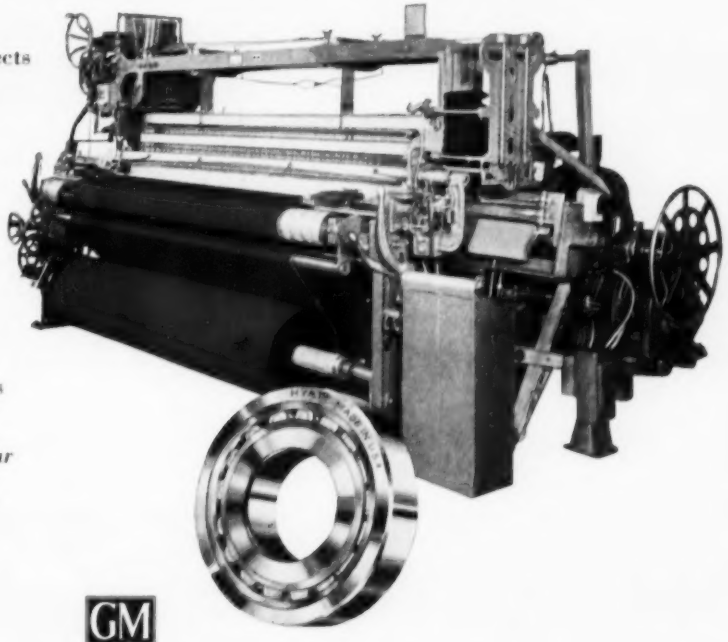
FREE! This 16-page booklet lists the many chemicals available from Harshaw.

WRITE TODAY FOR YOUR COPY

Better bearings increase your *sales appeal!*

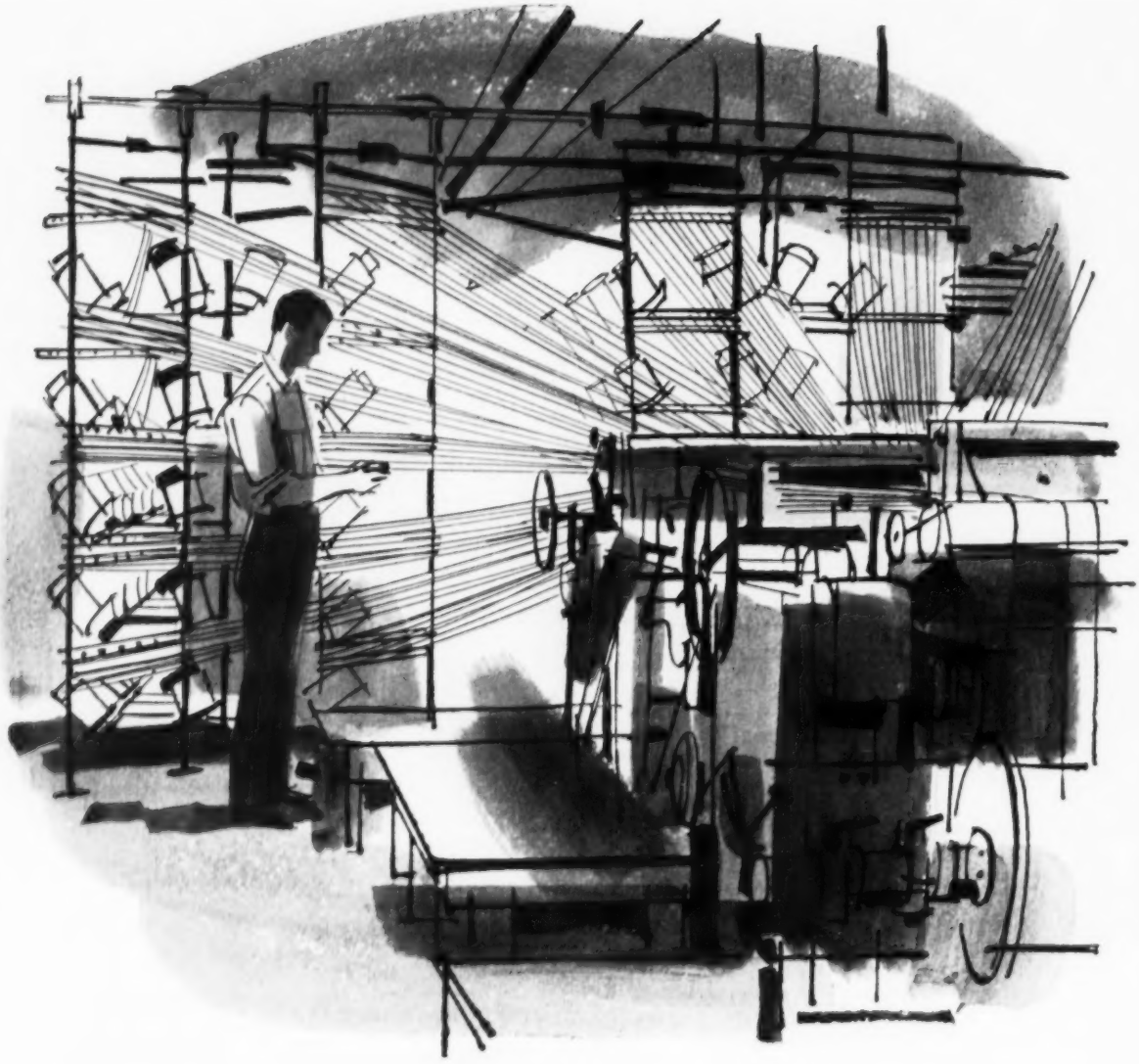
What does a woman judge by when she selects her dress or drapery materials? Pattern and color, of course. But it's the look and feel of the *fabric itself* that helps her make up her mind . . . and that's how HYATTS can help make the sale for you!

Precision-built HYATT Hy-Roll Bearings maintain critical settings far more accurately and dependably than fast-wearing plain bearings which allow too much play. And there's never a trace of oil mist or splatter with sealed HYATTS. What's more, they can save you up to 90% on lubrication and up to 40% on power . . . drop your maintenance costs way down on preparatory and finishing equipment as well as looms. *So be sure to specify HYATT Hy-Roll Bearings on all your new or modernized machines—it pays!*
Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey.



GM GENERAL MOTORS

HYATT HY-ROLL BEARINGS
FOR TEXTILE INDUSTRY



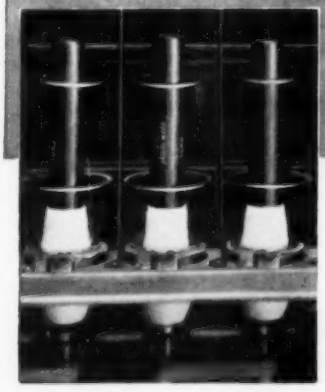
Nowhere in the textile industry can your mill problems be solved more realistically and effectively than in American Viscose Corporation's TRD*. This is a priceless plus you get with Avisco® fibers or yarns, and you pay no more for it.

*Here in our Textile Research Department we use actual mill machinery under mill operating conditions. With such complete facilities, we can start with the fiber, open it, card it, spin it, weave it, dye and finish it. Or starting with the yarn, we can beam it or twist it, weave it or knit it, dye it and finish it. What works here will work in your mill, too.

AVISCO

This assistance is as near as your phone. Call LA 4-7200 or write American Viscose Corp., 350 Fifth Ave., New York 1, N. Y.

DELAWARE MILLS



Says Mr. William C. Appleton, President of Delaware Mills, Inc., "We are well satisfied with our HERR Conical Rings both on spinning and twisting."

Herr Conical Rings are used on these new Saco-Lowell GWALTNEY Spinning Frames. They are also used on Delaware Mills — Universal Winding Company 10B Twisters.

The HERR Conical Ring provides ideal conditions for the spinning or twisting of any yarn.

Produce High Bulk Orlon at Increased Speeds and with Improved Quality by Using . . . .

HERR CONICAL RINGS

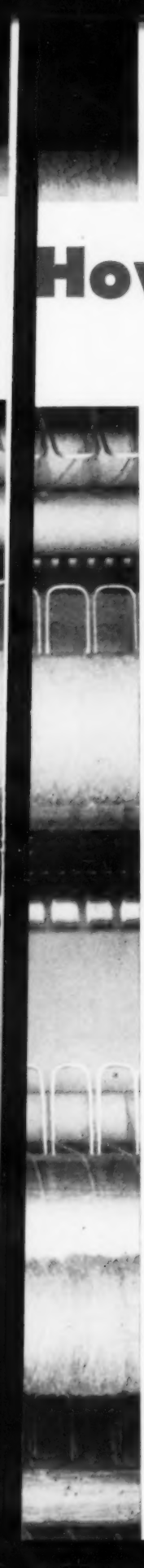
Equip with HERR Conical Rings and begin to enjoy these profit making features. You can speed up production, improve quality and lower costs with HERR Conical Rings. You'll gain too, many other advantages. They stop yarn breakage, permit heavier doffs, produce smoother yarns and reduce fly. You'll enjoy cleaner yarn because oil is not thrown off. Frames and room floors stay cleaner. Travelers last longer because oil is carried in capillaries to ring surfaces. Maximum spindle speeds are achieved.

Learn more about these wonder rings. Write today for descriptive literature.

FOR SPINNING AND TWISTING WORSTED, WOOLEN, RAYON, NYLON, ORLON AND BLENDED YARNS OF ALL TYPES

HERR MANUFACTURING CO., INC.

310 Franklin St., Buffalo, N. Y.



How Dayco Rub Aprons reduce card downtime

. . . improve yarn uniformity

With downtime on a 60″ card costing an average of $25 an hour, mills report new Dayco Rub Aprons are saving really substantial amounts every month. They completely eliminate the time formerly lost in oiling ordinary aprons.

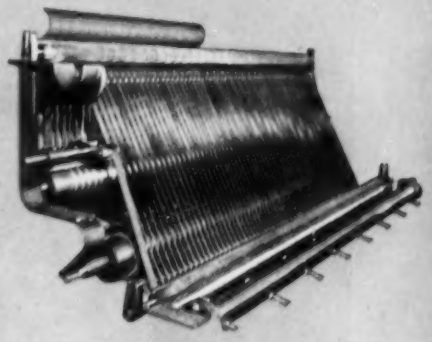
Because Dayco Rub Aprons are made of the finest synthetic rubber compounds, they require *absolutely no oiling*. Since most mills oil ordinary aprons every time cards are stripped, this eliminates many hours of card downtime.

Actually Dayco Rub Aprons reduce downtime enough to pay for themselves in just a few months.

Yarn uniformity immediately improves with Dayco Rub Aprons on your cards. Special compounding gives a higher, longer lasting coefficient of friction. New 2-Ply rubber impregnated, reinforced fabric construction reduces eccentric motion as much as 33%. Perfectly concentric, Dayco Rub Aprons hug rolls tightly for constant, even traction. Result: greater control of yarn density for vastly improved quality and uniformity.

Compounded to resist emulsion oils, Dayco Rub Aprons do not "grow," nor are they affected by temperature or humidity. Improved end construction grips buttons tightly. All these add up to long, trouble-free service.

Your Dayco Representative will stop to see you soon. Ask him for the details on all the money-saving features of Dayco Rub Aprons. Or write The Dayton Rubber Co., Textile Div., 401 S. C. National Bank Bldg., Greenville, S. C.



Dayco Endless Condenser Tape

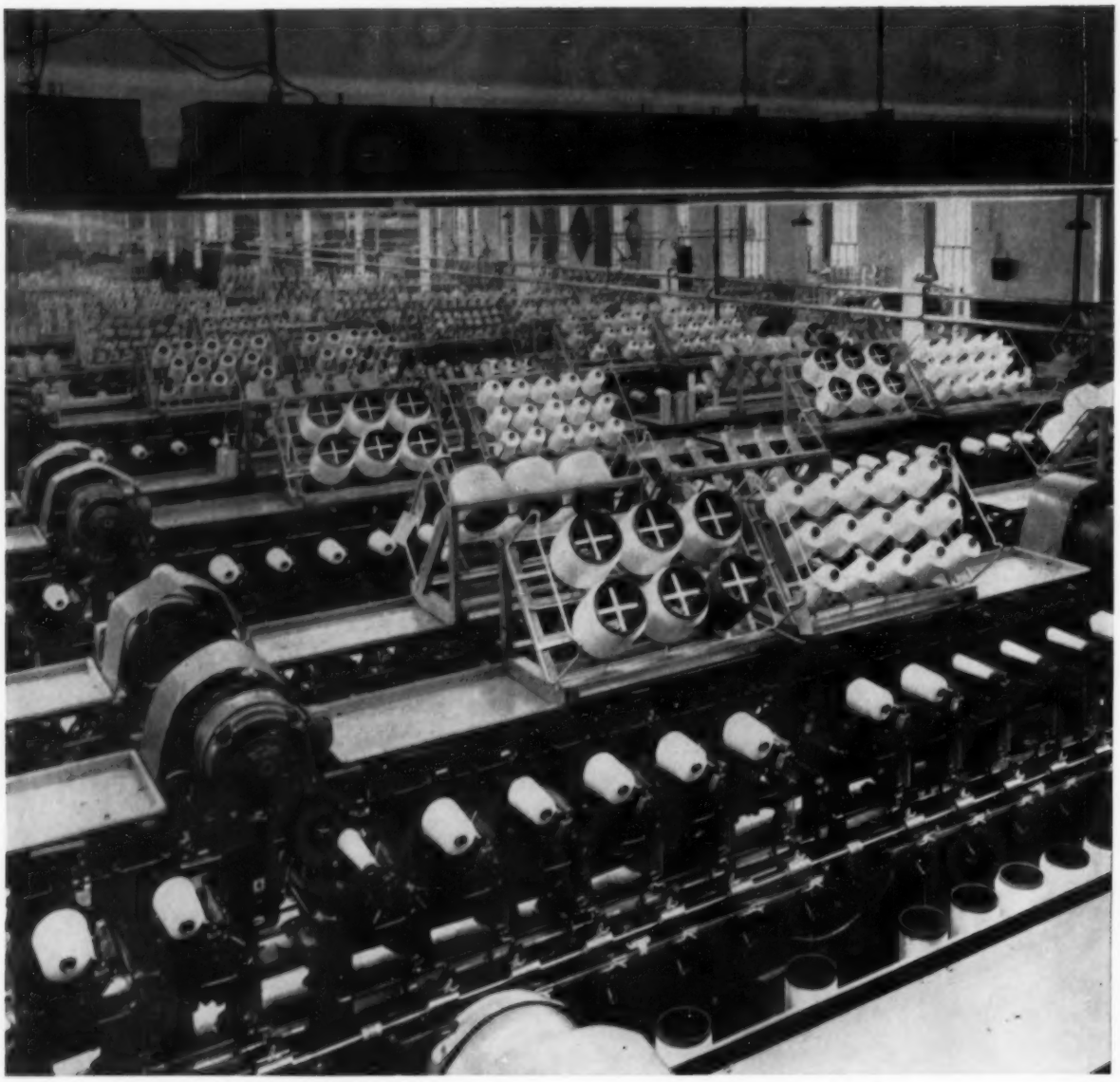
Features offering additional savings . . . greater card efficiency:

- No stretch—little need for take-ups
- Less tendency to twist or turn over
- Easy to clean—require less attention
- Unaffected by oil or static
- Will not crack, economical, efficient

© D. R. 1957

Dayton Rubber

Dayco and Thorobred Textile Products for Better Spinning and Weaving



Specific Lubricants for Specific Problems

For want of the *exactly right* lubricant, a machine in your plant may not be functioning as productively as it should. Because Standard Oil lubrication engineers are in constant contact with users, Standard Oil lubricants are always abreast of the textile industry's needs.

The fact that after 70 years of service to the textile industry of the South, Standard Oil lubricants continue first in popularity, is proof they continue to deliver satisfaction down through the years. Your Standard Oil representative will analyze your lubrication problems and submit recommendations without cost or obligation.

STANDARD OIL LUBRICANTS

STANDARD OIL COMPANY (Kentucky)

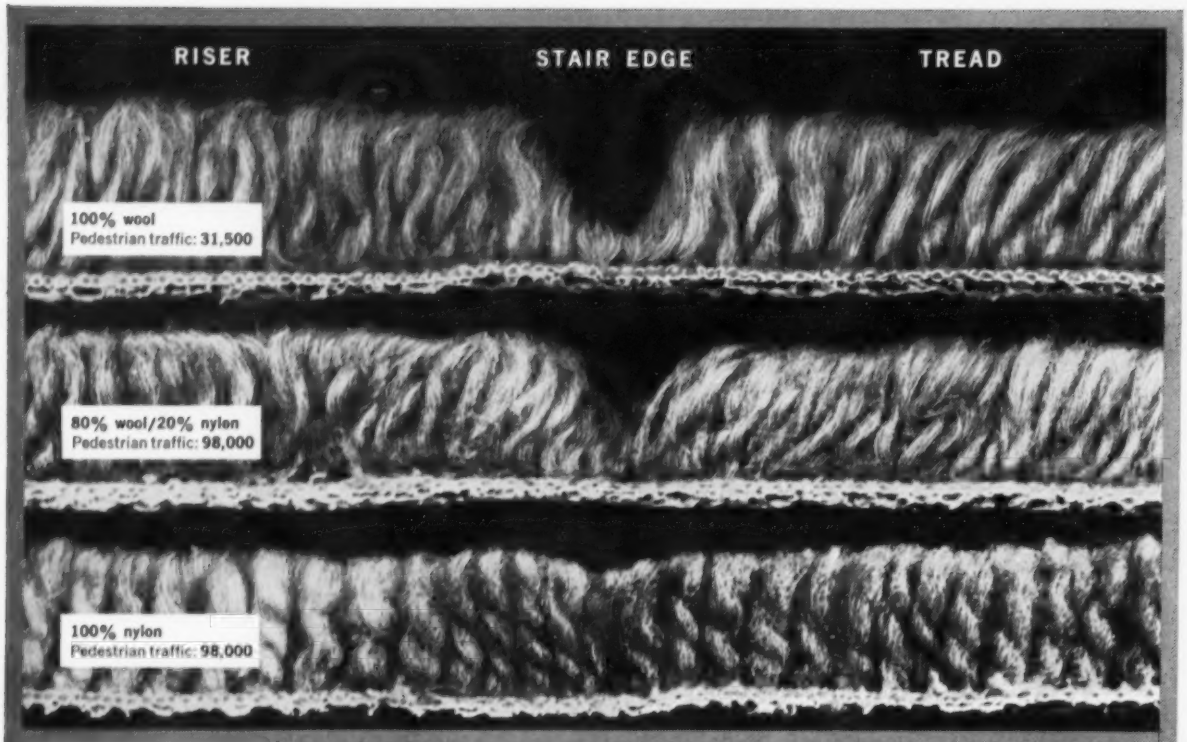
In carpeting, nothing adds all-around performance like

NYLON

• How does nylon carpeting compare with wool? That's the question we have been asked most often by floor covering manufacturers, retailers—and consumers.

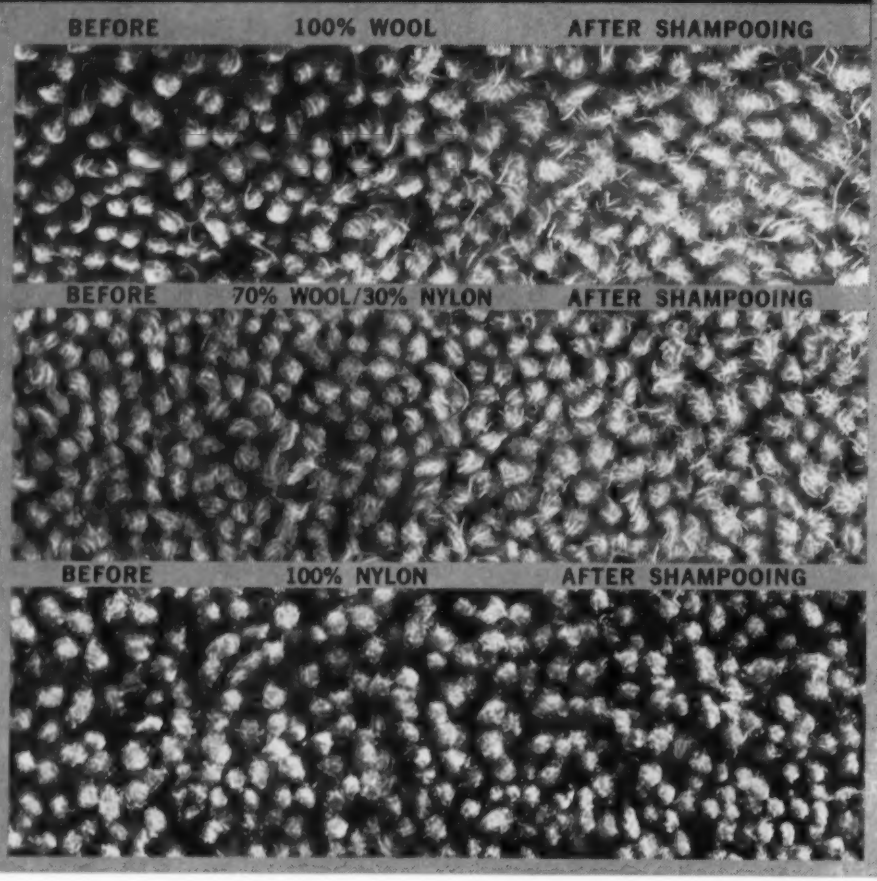
• Here, to our knowledge, is the first definitive answer on four of the most important counts: Wear, permanent texture, recovery from crush, and luster.

• It took many, many months to complete these actual in-use and laboratory tests. We'll be delighted to explain them in detail. And reprints are yours for the asking—



permanent texture

Photos show identical* strips of carpeting before and after shampooing 10 times with rotary brush action. 100% wool has lost considerable texture. The addition of 30% nylon produces a fabric which stands up remarkably well, but not as well as 100% nylon which shows virtually no texture loss.



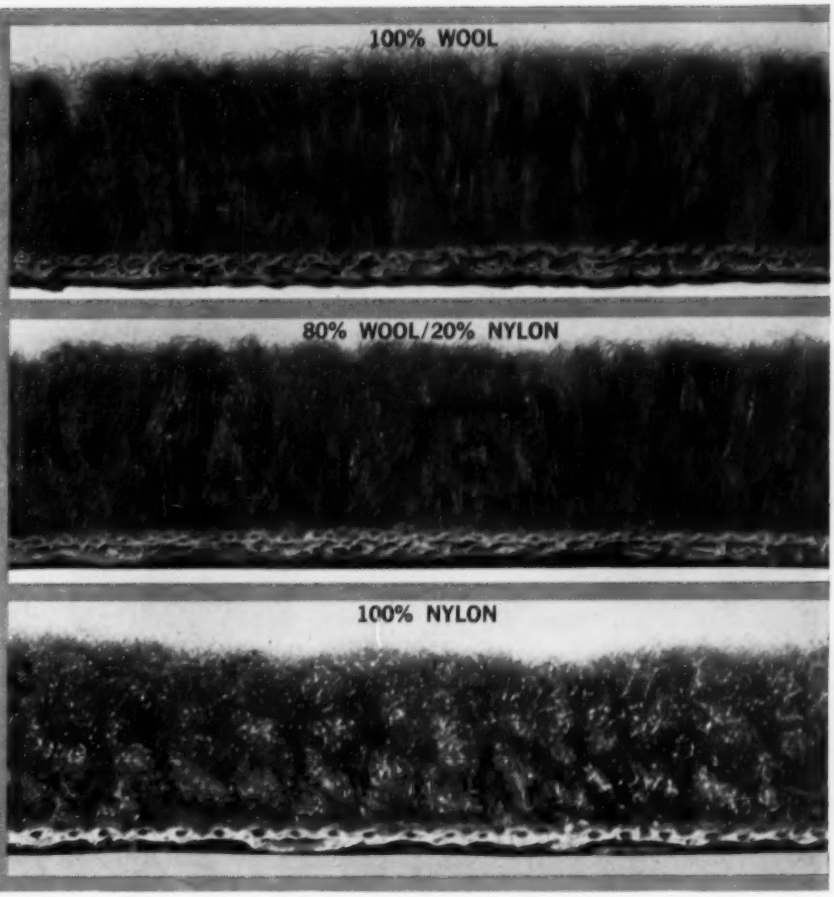
wear...

Nylon outwears wool and every other carpeting fiber known. In this test, identical*, unpadded strips of carpeting were laid on bare, rough steps in an industrial plant. Strips were rotated regularly. 100% wool broke down at 31,500 pedestrian traffic mark. 80% wool/20% nylon was still useable after 98,000 pedestrians. At same 98,000 mark, 100% nylon shows virtually no wear.

luster

The luster of nylon is well known. Manufacturers of better wool carpeting have for some time been adding nylon to get additional sparkle. Shown here are the relative degrees of luster of 100% wool, an 80% wool/20% nylon blend, and 100% nylon*

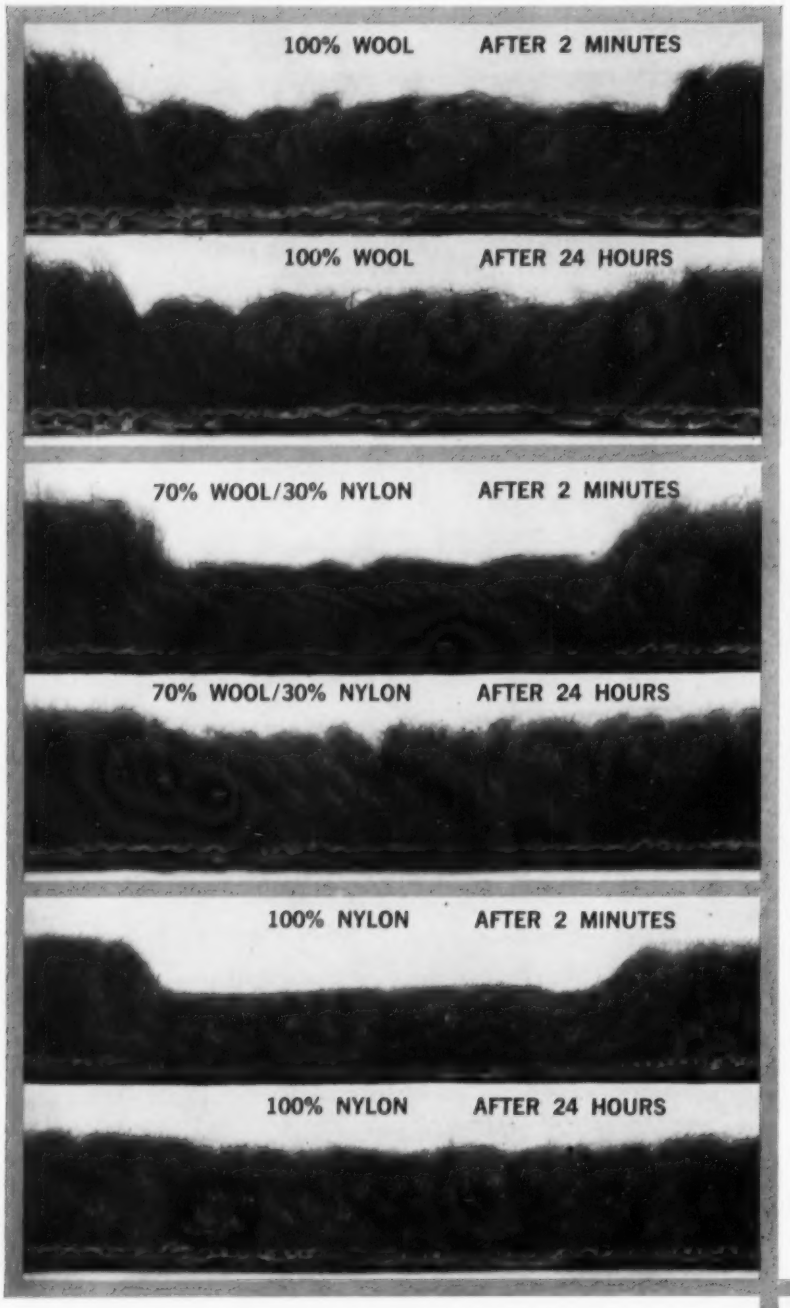
For this test, as in all others, identical* fabrics were used. But in order to get a color which would photograph properly against a white background, the carpet samples were re-dyed. Note that, as a result, the wool sample has lost almost all twist while the 100% nylon has lost virtually none.



THE NEW Nylon Staple I·R·C

more tests

For further information use Handy Return Card, Page 173


100% WOOL AFTER 2 MINUTES
100% WOOL AFTER 24 HOURS
70% WOOL/30% NYLON AFTER 2 MINUTES
70% WOOL/30% NYLON AFTER 24 HOURS
100% NYLON AFTER 2 MINUTES
100% NYLON AFTER 24 HOURS

recovery from crush

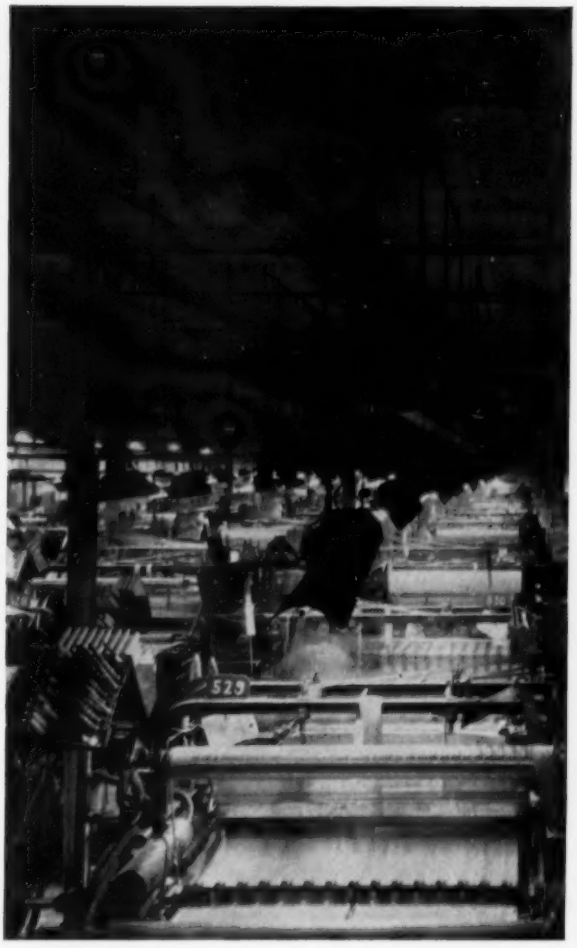
Identical* carpets were subjected to a concentrated weight of 25 pounds per square inch pressure for 24 hours. This is comparable to the weight of a *standard sofa.* Photos were taken 2 minutes after removal of load and again 24 hours later. Although wool starts recovery more quickly, it does not come back completely after a full day. 70% wool/30% nylon blend and 100% nylon recover more slowly but more completely.

*Within each test, strips of carpeting were identical except for fiber content.

THE NEW Nylon Staple I·R·C

INDUSTRIAL RAYON CORPORATION Sales Offices: 500 Fifth Avenue, New York 36, New York • 627 Guilford Building, Greensboro, North Carolina

Wearability—recovery from crush—permanent texture—rich, vibrant luster ... these are the qualities you and your customers demand in fine carpeting. And here you see how nylon, in blends and 100%, adds these qualities to carpeting. In carpeting, *nothing* adds all-around performance like nylon. Want more details?



YESTERDAY—Stonecutter Mills, pioneers in providing workers with good lighting, installed this fluorescent system in their weave shed in 1939—a year after General Electric developed the first practical fluorescent lamp.

TODAY—To take advantage of newer sources and techniques developed by General Electric, this new lighting system was installed. Now there are no more sharp, tiring contrasts of large dark and light areas—and less worker fatigue.

You can do what Stonecutter Mills did!

New General Electric Lamps can make your weave shed safer . . . more efficient

YOU can do what they did at Stonecutter Mills, Spindale, N. C. They picked new General Electric High Output Fluorescent Lamps in relighting their weave shed. The higher light output and excellent performance of these lamps make the weave shed more efficient. It is a safer place to work. The employees enjoy the more pleasant over-all brightness.

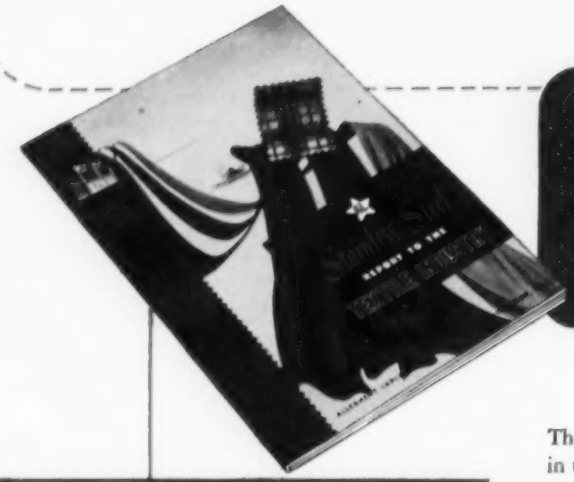
G-E LAMP UNIFORMITY—Besides their much greater light output, these G-E Lamps have an extremely *uniform* life. An average of 99 out of each 100 lamps *will still be burning after a full year's service* in single shift plants. And they are 99.9% free of physical defects which could affect their performance in normal service.

For additional information on how G-E Lamps give you more light at less cost, write: General Electric Co., Large Lamp Dept. TI-77, Nela Park, Cleveland 12, Ohio.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Allegheny Ludlum reports to the Textile Industry



This new 40-page booklet will be of vital interest to everyone concerned with textile manufacturing today.

The latest applications of Allegheny Stainless Steel in the textile industry are making news—news that is of interest to industry men who are looking for ways to reduce mill costs and improve quality and production.

Whether your interest is in yarn manufacture, weaving, dyeing, bleaching or finishing, this 40-page, full color report shows clearly how stainless steel is able to do the tough jobs that break the backs of other materials . . . how its long life in service means long-term economy on *all* jobs.

Included too, is a complete section on the technology of Allegheny Stainless Steel as it relates to problems in the textile field. You can see where and how to use it to best advantage, and what grade to select to meet each individual requirement. Both mill men and equipment designers will find it loaded with up-to-date, useful facts.

Use the coupon below, and mail to:
Allegheny Ludlum Steel Corporation, Oliver Bldg., Pittsburgh 22, Pa.

CONTENTS

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- Warp Preparation
- Weave Room
- Wet Processing
- The Technology of AL Stainless Steel

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WSW 6440

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Allegheny Stainless

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Warehouse stocks carried by all Ryerson steel plants

He puts performance-plus-economy in your next season's shades!

Matching unusual shades is a job for specialists who can formulate for the required working and fastness properties *at minimum cost!* Smart buyers do business with dyestuff makers who provide this specialized assistance.

National Aniline is amply staffed to render exceptionally fine technical service. Our representatives spend much of their time in the mills. And they are well supported by the fast, accurate work of strategically located Application Service Laboratories.

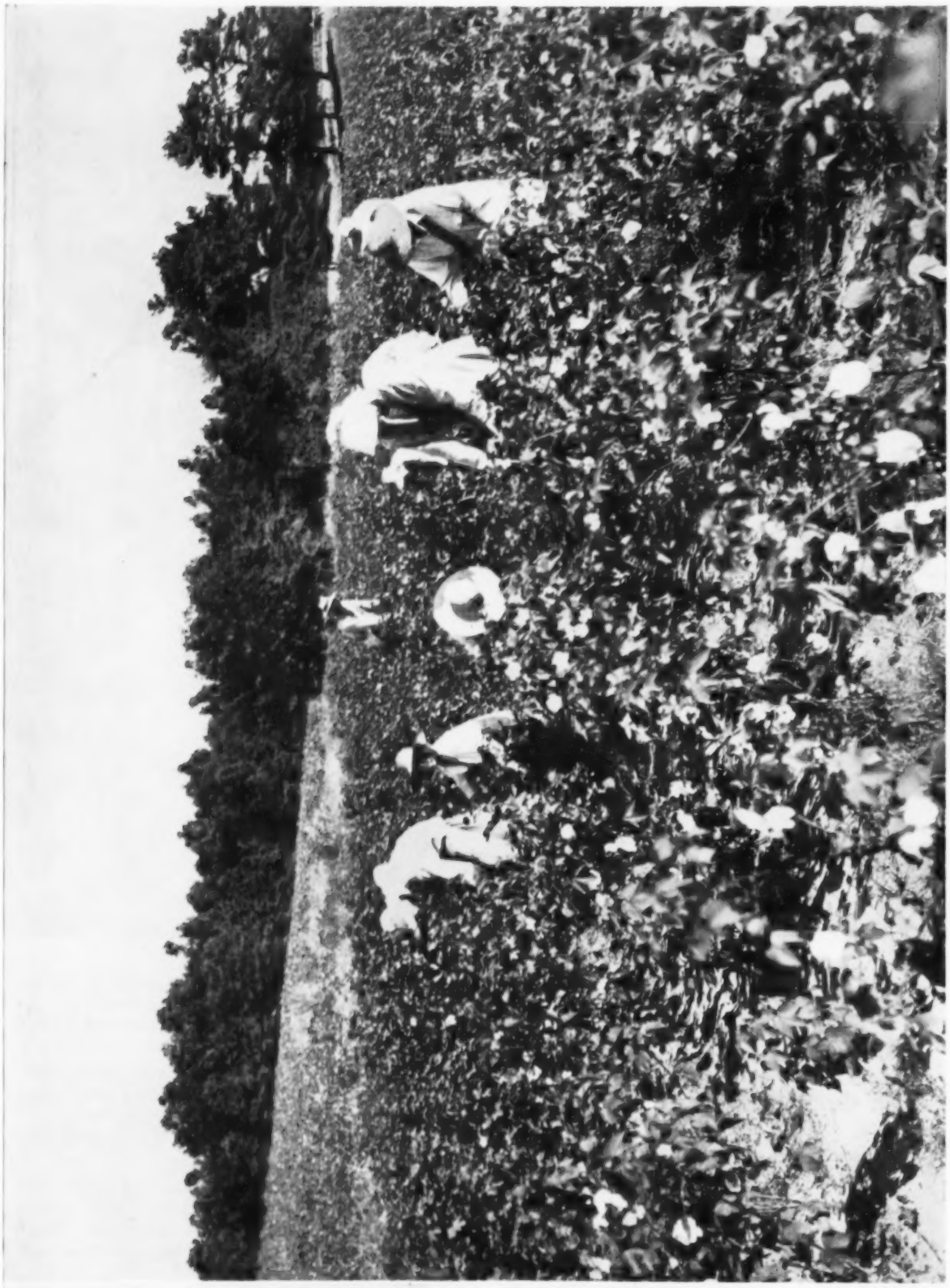
Backing up this on-the-job service are the industry's most complete shade cards, Standardization Control Laboratories to assure unerring product uniformity, and constant basic research on still better dyes and application methods.

This comprehensive service is included in the price you pay for dyestuffs. You are sure of getting it when you call National Aniline.

NATIONAL ANILINE DIVISION ALLIED CHEMICAL & DYE CORPORATION • 40 RECTOR ST. NEW YORK 6, N. Y.

Akron Atlanta Boston Charlotte Chattanooga Chicago Columbus, Ga. Greensboro Los Angeles New Orleans Philadelphia Portland, Ore. Providence Richmond San Francisco Toronto

Allied Chemical



PICKING COTTON IN A SOUTH GEORGIA FIELD
NO. 3 IN A SERIES OF AMERICAN LANDSCAPES PRESENTED BY MORTON MACHINE WORKS, INC.

THE OLD BOSS DYER SAYS:

*The raw stock vat dyeing process slightly reduces the fiber length of cotton fibers, but lower twists are required to get maximum yarn strength when vat dyed stock is used. Generally a vat dyed yarn is stronger than the undyed yarn.

* The Old Boss Dyer reminded us that sometimes folks get a little tired of everybody trying to sell them something.

O. K. This month we'll forget about MORTON SYSTEM DYEING MACHINERY. Instead we thought you'd be interested to see some real "cotton pickers" working in a South Georgia field.

(Confidentially, though, we are now manufacturing a large quantity of dyeing machinery for our friends in the mills. We would appreciate the privilege of placing your machinery and supply requirements in our production schedule. May we hear from you?)

MORTON MACHINE WORKS, Inc.

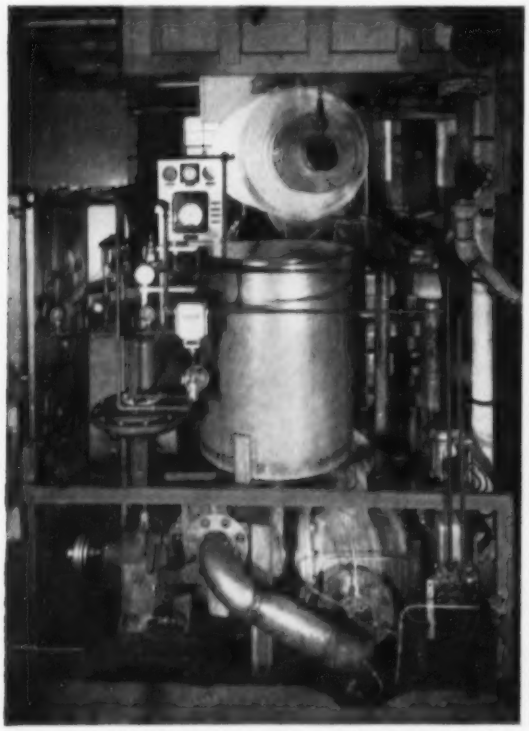
COLUMBUS, GEORGIA, U. S. A.

Manufacturers of the MORTON SYSTEM Machinery for Dyeing and Bleaching of:
BEAMS -:- PACKAGES -:- STOCK -:- PIECE -:- TOPS
VALVES — PUMPS — BEAM AND PACKAGE EXTRACTORS AND DRYERS — DYE BEAMS, ALL MAKES AND DESIGNS — DYE TUBES — DYE SPINDLES — TUBE SPACERS — STAINLESS STEEL DYE TUBES
CUSTOM BUILT TANKS TO CUSTOMER'S SPECIFICATIONS.

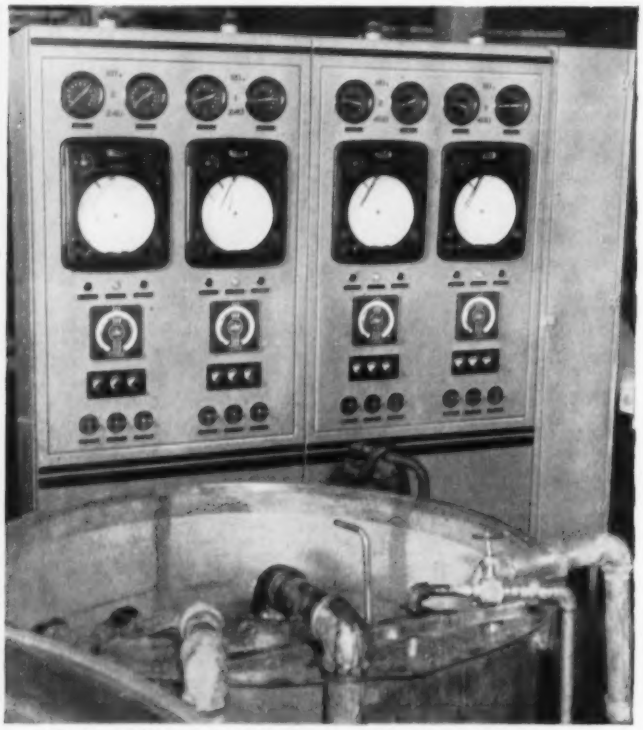
Progressive Mills Depend on

Foxboro Remote CycleLog* Controllers regulate temperature schedules in knit goods dyeing operation at William Carter Co., Barnesville, Ga. From this centralized location, dyer and assistant easily handle more than 15 complicated time-temperature schedules simultaneously.

*Reg. U.S. Pat. Off.



Foxboro At-The-Machine System for complete control of high temperature dyeing machine. Proper temperature schedules, flow and flow reversal rates are assured in synthetic cloth dyeing at Kenyon Piece Dye Works, Kenyon, R. I.



Foxboro Cabinet Control Systems. Shown here are 4 of 15 identical control systems regulating dyeing schedules in different makes of package dyeing machines at Dixie Mercerizing Company, Chattanooga, Tenn.

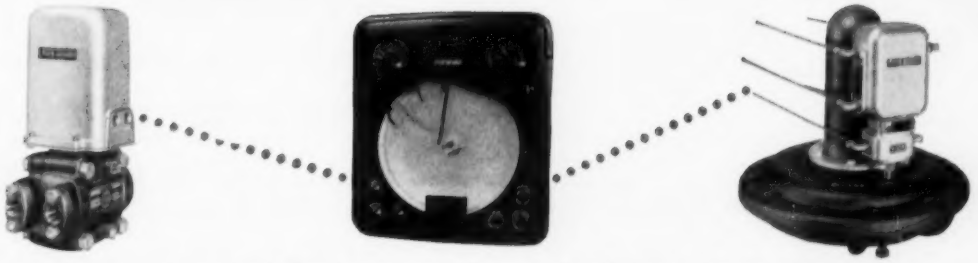
COMPLETE Dye Control Systems

...engineered by Foxboro

More and more modern mills are finding that consistent uniformity is assured economically in *any* dyeing operation with a Foxboro-Engineered Control System. These advanced instrument systems are *complete* . . . perfectly matched to the machines they control. They're available for every type of dyeing: raw stock, yarn, synthetics, and others. There's no guesswork. Every step in the most complicated flow or temperature schedule can be precisely reproduced by simple knob settings, giving you uniform results, every time. The installations shown here, are typical of hundreds of Foxboro Engineered Cabinet Control Systems. Depend on them for *better* control of every dyeing operation in your mill.

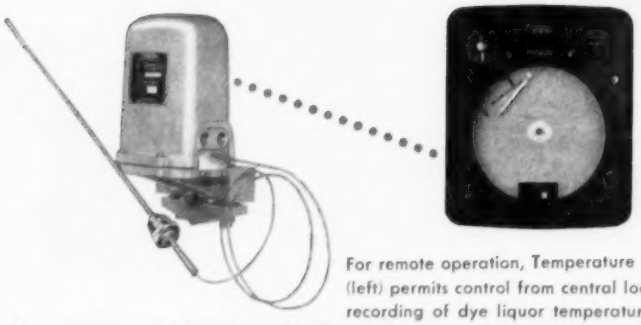
Write for Data Sheets on Control for your type of dyeing operation. **The Foxboro Company, 487 Neponset Ave., Foxboro, Mass., U.S.A.**

FOR AUTOMATIC CONTROL OF FLOW AND PRESSURE...



By combining flow and flow reversal control with overriding pressure control, a Foxboro system gives the precise flow required by the dyer, plus positive protection for beams, to prevent blowing. Type 13A d/p Cell Flow Transmitter (left), measures dye liquor flow, and transmits it to Timer-Set Control Station (center), where actual flow rates are recorded. Operator merely sets desired rates... control action maintains exact rate and reverses flow automatically. Control setting is transmitted to valve-mounted Model 59 Flow Controller (right).

FOR AUTOMATIC CONTROL OF TEMPERATURE CYCLES...



For remote operation, Temperature Transmitter (left) permits control from central location, and recording of dye liquor temperature on same chart with flow record. Foxboro CycleLog (right), the camless, time-schedule controller, fills all normal dyeing requirements. Each step of individual schedules set by simple adjustments of knobs... CycleLog automatically carries out entire dyeing schedule.

FOXBORO
REG. U.S. PAT. OFF.

INSTRUMENTATION FOR TEXTILE PROCESS CONTROL

SAVE
THE PART
OF YOUR
PROFIT
THAT LIES
HERE!

SONOCO

cones reduce press-offs and waste!

SONOCO precision-made cones deliver smoothly and evenly down through the primary wind.

For over 57 years, Sonoco research has pioneered in the creation of cone surfaces and tapers to meet every new yarn development in the textile industry. The right combination of surface and taper will give a perfect foundation for a sound package for every type yarn.

Get the most efficiency in winding, packaging and delivery of yarns. Use Sonoco precision-made, job-engineered cones.

Typical of SONOCO product improvement is this 3°30′ Velvet Surface Cone. The velvet surface prevents slippage of filament yarns or fine count cotton yarns in primary winding. This package feeds off smoothly and completely without sloughing, hanging or breaking. The Velvet Surface is available on all SONOCO cones.

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PAPER CARRIERS
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News IN BRIEF

TWUA Prescribes for Industry's Ills. In a letter to President Eisenhower, the Textile Workers Union of America has presented a nine-point program to relieve the textile industry's problems. The union's proposals include Govern-

ment purchase and distribution of textiles and apparel to the needy at home and abroad, Government research programs, a 35-hour week at 40 hours pay, and a "consistent and sensible" tariff policy.

KAE Big Success. Potential buyers flocked to the Knitting Arts Exhibition this year in numbers which exceeded 1955's attendance by an estimated 35 per cent. Actual sales from the floor were said to be unusually high, with one company reporting bookings of more than a million dollars.

Renew FFA Guaranties. Mills filing continuing guaranty forms with the Federal Trade Commission under the Flammable Fabrics Act should remember that these guaranties are valid for three years. Many which were filed at about the time the Act became effective in July 1954 are nearing expiration and must be renewed. Two notarized copies of the form must be filed with FTC.

Insurance Deadline Extended. Knitting mill executives have until July 15 to take advantage of the group life insurance plan offered to member firms of the National Knitted Outerwear Association [see TEXTILE INDUSTRIES for May, 1957, p. 89].

ACMI Conventions. Dates for the next two annual conventions of the American Cotton Manufacturers Institute have been announced. Next year's will be held April 10-12, at the Hollywood Beach Hotel, Hollywood, Fla. In 1959, the association will meet March 19-21, at the Palm Beach Biltmore Hotel, Palm Beach, Fla.

Shorter Work Week "The shorter working week seems inevitable," says Eugene J. Benge, management consultant, of Asheville, N. C. Noting that the work week has fallen from 70 hours a week in 1850 to 40 hours in 1956, while the stand-

ard of living increased 334 per cent, Benge predicted that "large profitable companies subject to automation are likely to concede a 35-hour week within the next few years." However, he feels that the 4-day, 32-hour week is still pretty far off.

1957 Cotton Crop. A tentative prediction of an 11,512,000-bale cotton crop has been made by the cotton department of the National Bank of Commerce, Memphis, Tenn. Factors considered in making the preliminary forecast included amount of land put in the soil bank, spring weather conditions (it was cool and wet in the Cotton Belt), average abandonment from acreage allotment, and average yield. The estimate compares with a crop of 13,310,000 bales in 1956.

Japanese Synthetics Production. The Japanese Ministry of International Trade and Industry has announced the following targets for synthetics yarn production in 1960 (figures include blends; thousands of pounds):

Nylon	44,000
Vinylon (polyvinyl alchol)	75,000
Vinylidene	2,500
Polyvinyl chloride	6,200
Polyester	32,800
Acrylic	53,200

Japanese-Pakistani Rayon Plant. Tokyo's Asahi Chemical Industry Co. will build a rayon plant near Karachi, Pakistan, in conjunction with Dawood Corp., of Pakistan, and the Pakistan Industrial Development Corp. It will have a daily capacity of ten tons. Facilities for the production of sulfuric acid and carbon disulfide, and a 6,000 kw power plant will also be built, and a cellophane plant with a five-ton daily capacity is planned.

Ginning Course at Clemson. Clemson College, Clemson, S. C., will inaugurate undergraduate and graduate courses in cotton gin engineering this fall. Developed by

Clemson's School of Agriculture and the National Cotton Council, the instructional program is said to be the first of its kind offered in the United States.

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Beechcraft airfleet of the textile industry

Japan's Exports to Rise. According to the chief of the textile bureau of Japan's Ministry of International Trade and Industry, Japanese textile exports are expected to increase by 10 per cent in 1957 compared to 1956. However, the increase will come through stepped-up trade with Southeast Asia and the Middle and Near East.

Danger Ahead for Wool. The National Association of Wool Manufacturers has launched an educational campaign based on a 14-page booklet, "Danger Ahead — 50% Contraction in the Wool Tex-

Smith Bill Free Ride for Fiber Interests — Bachenheimer

Twenty-seven trade associations representing various branches of the textile and apparel industries are united in their opposition to the bill introduced by Congressman Smith and designated as H.R. 469. To express that opposition they have banded together as the Joint Committee on Labeling of Textiles and Apparel.

We support honesty in labeling and truth in advertising . . . . But the Smith Bill will not do the job. In its preoccupation solely with fiber identification it misses the main point of proper consumer and trade protection in textiles and apparel today. It rests on the same obsolete ideas that prevailed decades ago and which are among the basic premises of the Wool Products Labeling Act of 1939. Those concepts hark back to the day when there were just about three major fibers — wool, silk and cotton, when wool and silk were quite expensive and cotton was relatively quite cheap, and when the merit of any material was crudely judged by whether it had more wool and less cotton or whether it had more silk and less cotton. . . .

Telling the truth to the consumer on a label involves a far more difficult problem than the mere itemization of fiber components and their respective percentages. Even if we were to grant that in some cases these may have some significance, the fact is that today in a majority of instances such information is of no practical significance at all to the consumer. It is of no significance because:

First, the relative merits of different grades and qualities of the same fiber are sometimes more important than the difference in the relative value to the consumer of two distinct fibers. . . .

Labeling Committee's Ralph J. Bachenheimer

Second, a major vice of the proposed legislation is that it fails to recognize the important qualities imparted to textile material by the particular mode of fabrication or construction used. . . .

Third, fiber identification can have value only where the consumer has some knowledge of the properties and characteristics of each fiber. . . .

Fourth, there are no small number of instances in which fiber identification, coupled with percentages, may even be misleading. A small amount of nylon, when added to certain fabrics, imparts considerable strength, strength wholly disproportionate to its weight. . . .

Fifth. . . . What significance in terms of actual merits would a list of the components of various mixtures convey to the consumer? None. One of the unfortunate consequences of placing such emphasis on fiber identification is to support the false impression that any material which consists of 100 per cent of anything is somehow superior because of the [prefix] "100%."

The important point about the proper labeling of textiles is not in mere accuracy of information. The important thing is selectivity — that is, the selection of those representations that deserve chiefly to be noted. They will not always be the same in every case. They will depend upon the use to which the article is to be put.

The effect of mandatory labeling of fiber ingredients as in the case of the Smith Bill, imposes an immense burden on garment manufacturers without serving the essential purposes that sound labeling should carry.

There is, of course, good reason why a Bill such as this one will find great support among various fiber sponsors. It is naturally in the interests of cotton growers to emphasize the use of cotton. Manufacturers and sponsors of various synthetic fibers under special trade names are no less interested in the promotion of their products. It is obviously in the interests of such fiber groups to support legislation for fiber identification. It amounts to obtaining a free publicity ride at the expense of the garment manufacturers. But it is obviously special legislation, and however much such supporters may speak solicitously of the consumer's interest the axe which they are grinding for themselves is altogether too conspicuous. Legislation of this kind would be a publicity feast for the various fiber interests. It is the garment manufacturers who would be expected to pay the bill. — *Ralph J. Bachenheimer, Chairman of the Joint Committee on Labeling of Textiles and Apparel, in testimony before the House Subcommittee on Commerce and Finance.*

This man washes eight times a day

(He's part of a quality control team that protects Dow caustic)

This man washes the insides of tank cars at the rate of about one an hour. Half an hour of intensive spray-washing, then half an hour of forced air drying.

These are very special tank cars because they're lined and insulated to handle shipments of Dow caustic soda solution. And every one of them gets a thorough cleaning each time it returns to one of the shipping points that make up the nation-wide Dow distribution network.

This practice helps guard Dow caustic against contamination. It's part of a well coordinated system of quality control operations at Dow that maintain rigid standards of product quality.

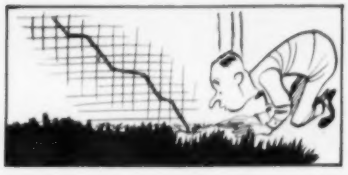
To learn how this system benefits all Dow caustic customers, contact your nearby Dow sales office or write to us. THE DOW CHEMICAL COMPANY, Midland, Michigan, Dept. AL603F-1.

YOU CAN DEPEND ON DOW

tile Industry." The publication points up the 50% loss in machinery since 1946 coupled with the rapid rise of low-wage imports, and warns, "there is grave doubt the industry today could meet mobilization needs." It says that soaring imports could result in more mill liquidations. A slide presentation of the booklet has been sent to each member of Congress, Federal officials, governors, wool manufacturers, wool grower organizations, and other textile and trade associations.

Japanese Spinners Retrench. The Japanese Ministry of International Trade and Industry has directed cotton spinning mills to cut back to a 16-hour day, a 6-day week, and a 308-day year, to combat overproduction.

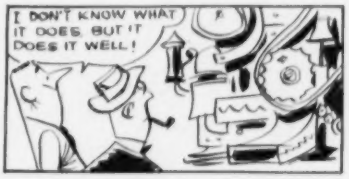
Textiles Rate Low. The textile mill products industry ranked 19th among 22 industries last year in percentage of profits on sales, according to figures compiled by the National Federation of Textiles from data supplied by the Federal Trade Commission and the Securities and Exchange Commission. The textile industry reported 2.6 per cent profit after taxes, the same as in 1955. Over-all profits for the industries studied were 5.3 per cent, compared to 5.4 per cent in 1955. Details are given in the table at the right.



High-Strength Rayon. A new, high-strength rayon staple, Avisco XL, has been announced by American Viscose Corp. The fiber is said to be 70 per cent stronger wet and 40 per cent stronger dry than conventional rayons.

"Fluid Bed" for Textiles. Six British textile machinery manufacturers are exploring a fabric drying process developed by the British Rayon Research Association which uses a "fluid bed" for conveying heat. In the fluid bed method, small glass beads, similar to those used for coating motion picture screens, rather than a liquid, are used for conveying heat. The beads are placed in a heated vertical cylinder, and air is jetted up through them. The fabric is passed through the beads for drying. Faster drying and reduced fuel costs are said to be the advantages over conventional systems.

Inventors' Contest. Instrument Society of America is conducting an inventors' contest, in which new ideas in automation will be judged from all fields of instrumentation. Deadline for entries is July 15. Details are available from S. D. Distelhorst, Director of Membership Relations for the Society, at 313 Sixth Ave., Pittsburgh 22, Pa.



News in Brief

NEKOMA Prizes for Lowell. The New England Knitted Outerwear Manufacturers Association has set up the Samuel P. Kaplan Memorial Fund to award two $100 prizes each year to the outstanding students in the basic knitting course at Lowell Technological Institute.

ACMI Appeals LCL Rates. The traffic department of the American Cotton Manufacturers Institute has appealed a proposed revision by the Southern Motor Carriers Rate Conference of less-truckload rates on textile products shipped between the South and West, even though the revision would reduce present rates. Basis of the appeal is that LCL shipments of less than

Sales and Profits After Taxes of Manufacturing Corporation by Industry Groups

1956

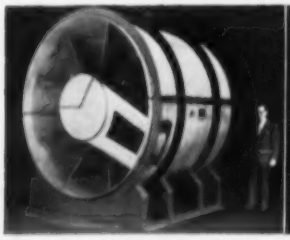
(Amounts in Millions of Dollars)

Industry	Sales	Profits after Taxes	Profits as % of Sales
1. Petroleum Refining	24,934	2,885	11.0
2. Primary Nonferrous Metals	9,609	889	9.3
3. Stone, Clay and Glass Products	8,278	681	8.2
4. Chemicals	22,178	1,779	8.0
5. Primary Iron and Steel	19,911	1,335	6.7
6. Paper and Allied Products	10,686	657	6.1
7. Instruments, Etc.	4,141	241	5.8
8. Machinery (Excl. Electrical)	28,085	1,511	5.4
9. Motor Vehicles and Equipment	24,300	1,252	5.2
10. Tobacco	3,959	197	5.0
11. Rubber Products	6,204	276	4.4
12. Products of Petroleum and Coal	1,043	46	4.4
13. Printing and Publishing	7,118	302	4.2
14. Fabricated Metal Products	16,078	640	4.0
15. Lumber and Wood Products	5,820	226	3.9
16. Electrical Machinery	19,630	737	3.8
17. Other Transportation Equipment	13,516	464	3.4
18. Furniture and Fixtures	4,100	138	3.4
19. Textile Mill Products	**13,191**	**342**	**2.6**
20. Food and Kindred Products	45,733	1,113	2.4
21. Leather and Leather Products	3,449	71	2.1
22. Apparel and Related Products	9,280	151	1.6

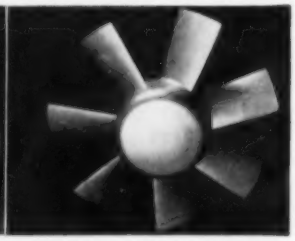
Source: Compiled by The National Federation of Textiles, Inc. from Quarterly Financial Reports of The Federal Trade Commission and the Securities Exchange Commission.

"BUFFALO" SPECIFIED BY RAYON MILL IN THREE MAJOR FAN INSTALLATIONS!

Above is the fourth giant "Buffalo" Vaneaxial Fan furnished to a rayon mill in India since 1950. Of stainless steel construction with a 96" cast aluminum airfoil wheel, it delivers 210,000 cfm against 2.1" pressure at 110° F. under slightly acid conditions and is powered by a 125 HP, 980 RPM motor. This is a repeat order of a duplicate Vaneaxial supplied to the same mill in 1954, which in turn, followed two similar 84" Vaneaxials shipped in 1950. Supplied with each of these Vaneaxials were "Buffalo" Centrifugal Fans ordered and re-ordered on the strength of performance and durability on the job!



Outlet side of 96" "Buffalo" Vaneaxial Fan showing fixed directional vanes which smooth air flow for high efficiency. Note streamlined fairing for V-belt drive. All parts in contact with acid air stream are stainless steel.



Efficient airfoil wheel used in "Buffalo" Axial Flow Fans has blades with pitch which changes from smooth hub to tips, producing uniform air flow and low rotor speeds; tested for strength in "Buffalo" Vacuum-pit and factory-balanced.

WHERE IS "BUFFALO" AXIAL FLOW YOUR BEST CHOICE? Write for Bulletin 3533 for full details and performance chart to aid you in making the best fan selection.

BUFFALO FORGE COMPANY

BUFFALO, N. Y.

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING FORCED DRAFT COOLING HEATING PRESSURE BLOWING

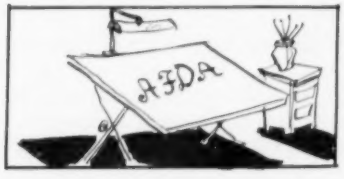
2,000 lb would be discriminated against compared to LCL shipments of more than 2,000 lb handled in the same manner.

First British Acrylic. Initial supplies of "Courtelle," acrylic fiber developed by Courtaulds, Ltd., will be available in England this summer. This is the first British-made acrylic to be marketed on a commercial scale.

Cure for Textile Ills. When a Maine director of the Textile Workers Union wrote President Eisenhower to ask what the Administration was doing for "distressed" textile areas, he got this suggestion from Stuart Rothman, Labor Department solicitor: "Consistent with economic laws and in keeping with the basic framework of our Government, firms are free to cease business operations."

Nylon-Leather Belting. A power transmission belting of nylon and chrome leather, bonded together by a process of "cold welding," is being manufactured in Germany. It is reported to be capable of transmitting 30 hp at a speed of 150 ft per sec through a belt less than one-half inch wide. It will stretch 35 per cent before failure.

Textile Designers Form Group. A group of about 30 free lance designers and design studios have formed the American Fabrics Designers Association, with Jack Prince of Prince Studio as president. Goals of the new association include establishment of standards of ethics and business practices, to help designers in relations with their clients, and to give legal protection to members.



Czechoslovak Synthetics Production. It is reported from Prague that Czechoslovak industry plans an annual production of more than 66,000 tons of synthetic fibers by 1960. Current production of viscose staple and filament is claimed to be as high per capita as that of the United States.

Japanese Rayon Firms Form Cartel. Japan's fourteen manufacturers of rayon staple have formed a cartel to control price and quantity in the export of the fiber. The agreement will become effective after approval by the Ministry of International Trade and Industry.

The first two in TI's new series of posters for mill bulletin boards appear on pages 103-106. *Reprints are available.*

USAF Parachute Data. The U. S. Air Force Handbook of current information on parachute development, design, fabrication, and testing is now available for industry use. The 339-page volume, "United States Air Force Parachute Handbook," PB 121934, is available from the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C. Price: $6.00.

TWUA Asks Probe. The Textile Workers Union of America has asked the Senate Labor Rackets Committee to investigate "corrupt or improper activities of textile employers." The union claims that police and officials are being used, especially in the South, "as instruments to prevent workers from exercising their rights to join unions of their choosing."

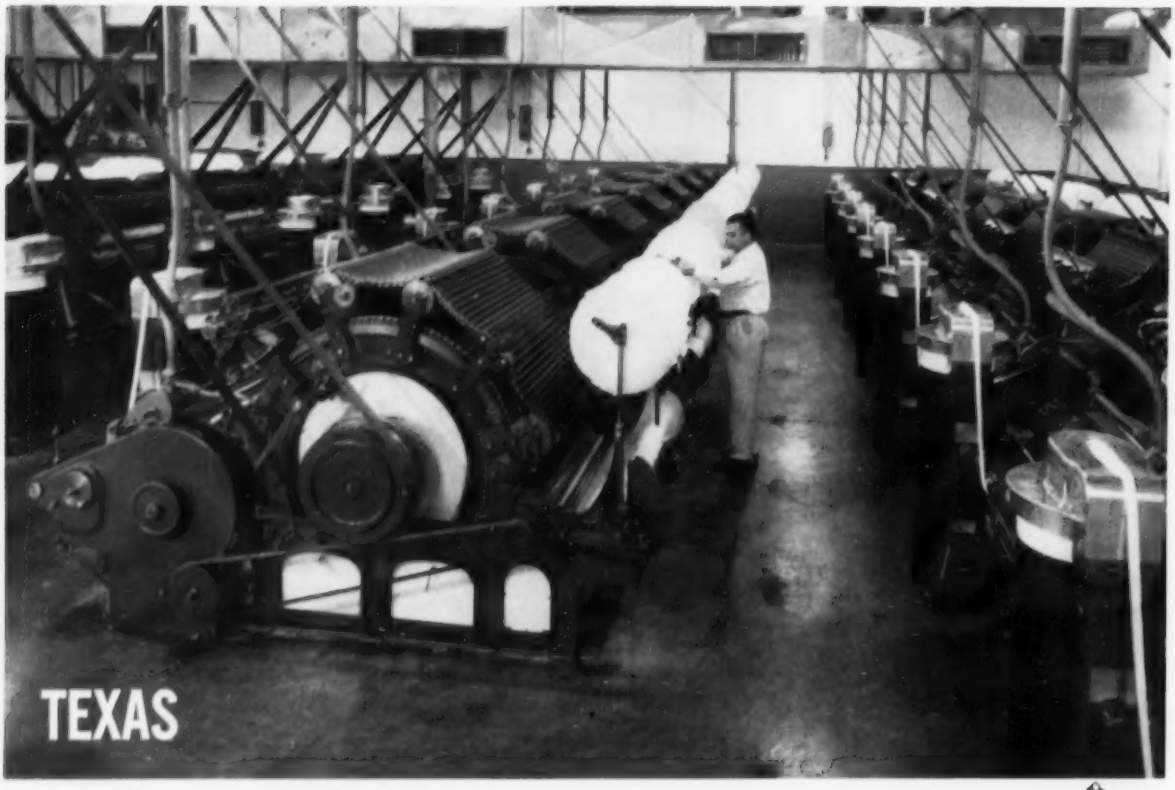
No Change in Jute Tariff. The U. S. Tariff Commission has ruled against Patchogue-Plymouth Co. in its request for higher tariffs on jute fabrics wider than 114 inches (used as backing for tufted carpets). The Commission is of the opinion that production of tufted fabrics has reached a peak, that inventories in the hands of importers are adequate to supply demand for the product, and that therefore this year's imports will decline and will remain at a lower level than 1956's record figure.

Better Carbonizing. The addition of a nonionic surface-active agent to the sulfuric acid in carbonizing increased wool yield 2½ per cent at a cost of 1/3 ¢ per pound, and yarn strength was increased 16 per cent, in mill-scale experiments conducted by two Australian scientists.

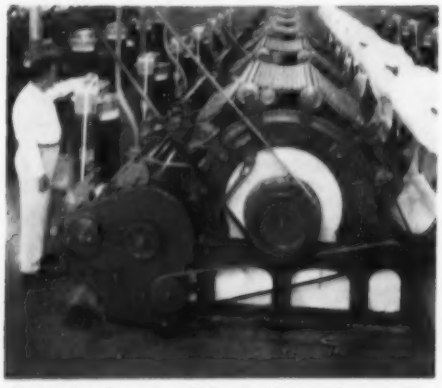
Metallic Color Favorites. The two standard colors, gold and silver, together make up more than 95 per cent of the consumption of metallic yarns, according to a survey made by Metlon Corp. among weavers, knitters, and manufacturers. Most of the remaining 5 per cent is made up of red, blue, and green.

Fabric Facts for Consumers. The U. S. Department of Agriculture has issued a bulletin, "Clothing Fabrics — Facts for Consumer Education," designed to help consumers buy clothes and fabrics. It discusses labeling, colorfastness, fiber types, construction, etc., and has a fabric glossary. Single copies are available free from Office of Information, USDA, Washington 25, D. C.

Marines to Test Dacron-Wool. The Marine Corps is wear testing an experimental summer-weight uniform of Dacron and wool. If successful, it will replace the present khaki tropicals of Dacron and cotton.



PLATT CARDS as far as the eye can see...



Platt Cards are solidly built to *close tolerances*. They take and *hold* accurate settings at all work speeds, producing even nepless webs.

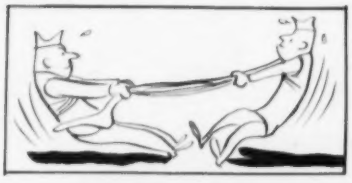
At the Postex Cotton Mills, Inc. there are 84 *Platt Cards* running. This fine sheeting mill uses *Platt Cards* exclusively. This is the third installation by the company.

Many cost-conscious mills are discovering the mechanical perfection of Platt machinery and the prompt, personalized service of Atkinson, Haserick & Co. throughout the U.S. May we present to you the cost and quality advantages inherent in machinery made by the *world's largest manufacturer of textile machinery?*

ATKINSON, HASERICK & CO., INC.
ENGINEERS & AGENTS FOR THE
WORLD'S LEADING TEXTILE MACHINERY
FRAMINGHAM, MASS. · CHARLOTTE 2, N. C.
Greenville, S.C. • Phila., Pa. • Bradford, Eng.

PLATT BROS. (SALES) LTD.
OLDHAM, ENGLAND
MARKETING THE TEXTILE MACHINERY MADE IN THE WORKS OF
PLATT BROTHERS & CO. LTD.
HOWARD & BULLOUGH LTD. DOBSON & BARLOW LTD.

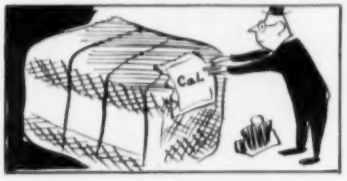
QM Tries Stretch Socks, Gloves. In testimony before the House Appropriations Subcommittee, Quartermaster Corps officials revealed



that the Army is experimenting with stretch-type socks and gloves. The gloves are intended as liners to be used with a leather shell.

Philippine Ramie Plant. Ramie Textiles, Inc., is constructing a ramie degumming and spinning plant near Manila, Philippines. The plant will be equipped with Swiss machinery.

Tax Ginnings — Calif. Cotton Men. California cotton growers have proposed that the state tax each bale as ginned at a rate of 0.1 per cent, instead of the personal property tax of $1.75 to $5 per bale now levied. The present tax is



assessed as of the first Monday in March, resulting in cotton being shipped out of the state as fast as it is ginned, to escape the impost. Growers say that the proposed method of taxation would not only increase revenue, but would help build up a cotton handling industry in California on a par with its cotton production. The state now has few warehouses, little merchandising of the crop, and no futures market.

Textile Problems North of the Border

New light is generated by two major documents that have appeared on the Canadian economic scene during the past year. These are the preliminary report of the Royal Commission on Canada's Economic Prospects and the report on the Canadian textile industry by the Canadian office of the National Industrial Conference Board.

The Gordon Commission expects that the full consumer demand for manufactured products will be about three times its present rate by 1980, but . . . . the textile industry is not expected to more than double its present output. However, most of us in this industry, particularly in the synthetic fabric and fiber section, expect to do a little better than that.

The National Industrial Conference Board reported to the Gordon Commission that domestic textile production may increase by anywhere from 105 to 170% in Canada by 1980.

I like to think in terms of at least 170% increase for this section of the textile industry. . . .

[An] important factor in the value of the textile industry to Canada is the extent to which it is Canadian owned and controlled. According to the National Industrial Conference Board, about 80 per cent of the capital employed in the textile industry is owned in Canada compared with only 52 per cent for all manufacturing and mining industries. United States ownership amounts to about 11 per cent of the Canadian textile industry — mainly in synthetic fiber production — and United Kingdom ownership amounts to about nine per cent.

This Canadian ownership and control of an important manufacturing industry is of more than usual economic and social importance at a time when there is serious, and justified, concern about the extent to which Canada's industrial future is being directed by people whose primary interests are not Canadian.

The one great problem facing Canadian producers of fabrics of synthetic fibers is the ease with which imported textiles and textile products can come into Canada and take over domestic markets vital to our progress and development. . . .

For the Canadian synthetic textile industry the seriousness of the present situation lies not so much in what we believe is a temporary decline, as in the fact that while Canadian mills' domestic shipments have dropped by 27,000,000 yards since 1950, imports have increased by 22,000,000 yards.

By far the greatest volume of these imports has been from the United States, and continues to come from this source. However, the very recent and rapid increase in importation of Japanese textiles and clothing is a matter of tremendous concern to us all.

Also disturbing is the increased attention that is being paid to the Canadian markets by the textile industries of such countries as Germany, Italy, India, and The Netherlands. Imports from countries other than the U. S. and the U. K. during 1956 increased by 45%. It is obvious that a continuation of this trend — and it is accelerating — on top of existing competition from the United States, cannot fail to have very serious consequences for this industry.

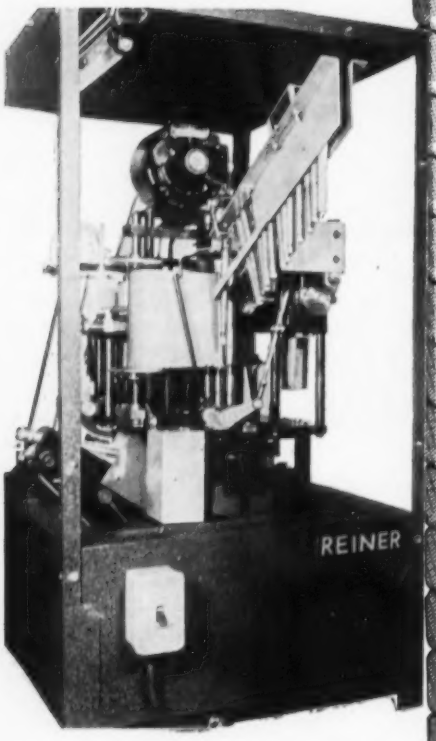
In connection [with imports from the U. S.] a section from the National Industrial Conference Board report is both interesting and important. The report says:

"It is difficult to secure evidence of dumping. But we may note that many of the American exporters whom we consulted for their views on the Canadian industry's problems dealt with this question in our conversations with them, stating their belief that at times large quantities (in Canadian terms) of American primary textile goods are dumped in Canada particularly when inventories in their countries are excessive."

Gerald L. Bruck, president, Bruck Mills, Montreal, in an address to the Silk and Rayon Institute's annual meeting at Montebello, Quebec.

New Labor-Saving Addition to the Reiner Line

QUILL REFINISHER AND DEGREASER



Entirely new in concept—this compact, space-saving (3½ ft x 2 ft), precision built Reiner Quill Refinisher can handle 30-35,000 cleaned or polished quills a day—at practically no expense and without any additional labor cost. IT PAYS FOR ITSELF IN ABOUT 10 WEEKS.

Production-tested to run at a capacity of up to 23 quills per minute, the Reiner Refinisher employs a 4-station processing cycle which provides thorough cleaning of quill grooves and gives a highly polished surface without the use of harsh abrasives. Quills last longer, and there is a material reduction in broken or tight picks, split or fuzzy filling which means more profitable, uninterrupted loom production.

Designed to be fed directly from Terrell Stripping Machines (Models L or K) The Reiner Quill Refinisher requires no operator—thus providing a substantial saving in labor cost. Quills feed directly from the stripping machine to the Refinisher, are processed and then ejected by a small conveyor. The materials used by this machine last approximately 20 hours before being replaced.

The machine's 4-Cycle standard operation provides for cleaning at the first two stations and waxing and buffing at the third and fourth. However, its extreme versatility provides for any required combination of 4 separate and distinct operations, i.e. straight cleaning to remove grease, or cleaning and waxing, etc. The Reiner Refinisher permits the polishing of sections of quills —such as tips, shanks, ferrules or any combinations wanted.

Constructed from the finest materials, with a sealed motor, the Reiner Refinisher will give many years of trouble-free service.

Adjustments and conversions from one operation to another can be readily and speedily made by a quill fixer.

THIS MACHINE CAN BE SEEN IN OPERATION AT THE REINER DEMONSTRATION ROOM IN WEEHAWKEN, NEW JERSEY.

IT PAYS FOR ITSELF IN ABOUT TEN WEEKS

ROBERT REINER, INCORPORATED

Telephone: UNion 7-0502 — From New York City call LOngacre 4-6882
(Only 10 minutes from Times Square by direct bus)

WEEHAWKEN, NEW JERSEY

AN EXECUTIVE Views

THE NEWS IN TEXTILES

Prepared by a man who is closely identified with the textile industry.

Gored Oxen

"I'M FOR economy, but . . ." prefaces the opening remarks of many a businessman as he buttonholes his Congressman or makes the pilgrimage to Capitol Hill to testify before an Appropriations Committee. This year has seen a record demand for cuts in the Federal Budget; it has also seen Congressmen besieged by business associations and individual businessmen loudly protesting cuts in spending for projects from which they stand to benefit, or demanding even larger appropriations than the President had originally requested.

Howard Haycraft, president of H. W. Wilson Co., book publishers, speaking, as reported by the Associated Press: ". . . we would like to see a reduction in federal expenditures wherever possible but this is scarcely the place to begin." "This" happens to be the rural library program, for which President Eisenhower's record $71,800,000,000 budget appropriated $3,000,000, and which Mr. Haycraft wanted increased to $7,500,000.

Or listen to D. C. Dosker, president of Gamble Bros., Louisville, Ky., manufacturer of wood parts for industry, asking for $2,215,000 for research into the uses of wood and wood products: "Frankly, gentlemen, I am somewhat aghast at the smallness of the size of this request . . . If this amount were multiplied by ten . . . . it would still be too small to do the job that needs to be done for the military safety and welfare of this nation."

As the *Wall Street Journal* puts it, the pleaders are invoking such sacred cows as defense needs and the protection of national prosperity. Above all rings the cry that proposed savings would be "short-sighted" and "false economy."

William F. Kirk, manager of the economics department of General Petroleum Co., wants $200,000 in the Bureau of Mines budget for petroleum statistics activities. ". . . inadequate funds for this purpose would be false economy."

William J. Hull, chairman of the legislative committee of the Ohio Valley Improvement Association, wants an additional $1,000,000 — making a total of $70,000,000 — for navigation aid and flood control along the Ohio. If his request is denied, it ". . . would inflict severe injury upon the national economy."

MANY local Chambers of Commerce have sent two telegrams to their Congressmen. The first calls for increased funds for local pork-barrel projects, or bitterly protests if they've been excised from the budget. The second telegram stridently demands a deep slashing of the budget and calls for all possible economies.

The Chamber of Commerce of Columbus, Ga., wants $6,750,000 to complete the development of the Apalachicola, Chattahoochee, and Flint River systems. The Chamber of Commerce of the Tonowandas (N. Y.) wants $297,000 to deepen Tonowanda inner harbor. Lower Bucks County (Pa.) Chamber of Commerce joins National Gypsum Co., Meenan Oil Co., and other interested firms, in asking that $16,500,000 rather than $9,000,000 be appropriated to deepen the Delaware River ship channel from Philadelphia to Trenton.

Even the U. S. Chamber of Commerce, arch-advocate of budget cutting, one of whose spokesmen said, "We feel that the budget can and must be cut by a minimum of five billion dollars," thunders in opposition at a House decision to eliminate the Commerce Department's Business and Defense Services Administration, at a predicted saving of $2,600,000 a year.

BUSINESS groups are quick to cry "Socialism!" when Federal spending for welfare projects is proposed. They are sometimes equally quick to protest cuts or demand increases in welfare projects where they themselves stand to profit.

The National Association of Home Builders wants Congress to put far more money into the mortgage-buying operations of the Federal National Mortgage Association than President Eisenhower asked; Douglas Fir Plywood Association wants more Government research into uses for wood products; local Chambers of Commerce in "distressed areas" want Federal grants and loans (the National Chamber opposes them). And closer to home, the National Cotton Council and other fiber groups are always with us, making their annual trek up the Hill to seek increased appropriations for U.S.D.-

How Much Per Traveler-Pound?

The true test of a traveler is the number of pounds of top quality yarn which can be spun or twisted with it before it wears out. The more yarn produced, the lower your cost per traveler-pound.

Millmen who keep a sharp eye on production costs always judge travelers on this traveler-pound rating. And that's why so many choose Victor Travelers for spinning or twisting.

Victors consistently cost less per traveler-pound for two reasons. First, because there are no better travelers made, by any test of quality and uniformity. Second, because Victor Service Engineers, all mill-trained men, can quickly grasp your special problems, and come up with the right answer.

They can not only recommend the *right* traveler, but can often make other suggestions for improving your quality and production, — whether you are running conventional fibers, synthetics, or blends.

Plan now to talk to a Victor man about your costs per traveler-pound. Write, wire, or phone the nearest Victor office . . . for prompt service.

•

VICTOR Ring Travelers

VICTOR RING TRAVELER DIVISION
OF SACO-LOWELL SHOPS

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A. research to benefit their products.

All in all, an interesting collection of gored oxen.

Government in the cotton business

Complaints are becoming increasingly loud and increasingly frequent that the Federal Government has taken over the job of buying and selling cotton, that ginners, merchants, shippers, cottonseed crushers, compressors, and warehousemen are either being squeezed out of the business or are finding that Uncle Sam is their sole supplier and customer.

Volume on the New York Cotton Exchange in 1956-57 was down 42 per cent from a year ago, reports Malcolm J. Rogers, the Exchange's president; and Joseph Henican, president of the New Orleans Cotton Exchange, says that his volume went down 45 per cent in the same period.

Root of the trouble, of course, is the ever-growing complex of farm programs; and one of the side effects feared by some observers is the eventual disappearance of the two cotton futures markets.

There is a growing recognition among farm groups that Government marketing of cotton under an artificial price system is the sure road to a continually decreasing consumer usage of cotton and to the day when the Government is cotton's *only* customer.

Farmers in five cotton states of the Mid-South have formed the American Cotton Producers Associates, and have gone on record with a plan to abandon Federal price support of cotton and return to a free market where the price of cotton is determined by supply and demand. There is a gimmick, of course. ACPA, along with various other farm and mill spokesmen, proposes that cotton producers be paid a direct subsidy by the Government for cotton sold on the domestic market, to offset the probable drop in price if Uncle Sam got out of the cotton business.

It goes without saying that cotton merchandisers want less Government interference. Speaking to the American Cotton Congress in Dallas at the end of May, Lamar Fleming, Jr., chairman of Anderson, Clayton & Co., the cotton industry's largest middleman, said that cotton's only alternative to a costly policy of domestic markets, "is a lower loan rate, a lower domestic price, and greater freedom of planting — perhaps pointing ultimately toward substantially a free market, with price support at levels designed to prevent debacles of price, and ultimately toward complete liberation of acreage controls."

We'll buy that, Mr. Fleming, and we too look forward to the day when the underprivileged (but not underfranchised) American cotton producer will be able to enjoy the benefits — and take the risks — of the American free enterprise system.

Date		Event	Location
Sept.	4-6	Fiber Society meeting jointly with members of Textile Institute	Hotel Statler Boston, Mass.
	13	Northern New England Section AATCC Outing	Wachusett Country Club W. Boylston, Mass.
	14	Southeastern Section AATCC	Harmony Club Columbus, Ga.
	20	South Central Section AATCC	Hotel Patten Chattanooga, Tenn.
	19-20	Fall meeting Textile Quality Control Association	Hotel Barringer Charlotte, N. C.
	26-27	Combed Yarn Spinners Association annual meeting	The Cloister Sea Island, Ga.
	27	Joint meeting Delaware Valley and New York Sections AATCC	Hotel Hildebrecht Trenton, N. J.
	27	Rhode Island Section AATCC	Narragansett Hotel Providence, R. I.
	27	Western New England Section AATCC	Rapp's Restaurant Shelton, Conn.
	28	Piedmont Section AATCC	Hotel Barringer Charlotte, N. C.
	28	Textile Operating Executives of Georgia fall meeting	Ga. Tech. Atlanta, Ga.
Oct.	2-3	Chemical Finishing Conference	Hotel Statler Washington, D. C.
	10-11	Fall meeting Southern Textile Methods and Standards Association	Clemson House Clemson, S. C.
	12	Textile Operating Executives of Alabama fall meeting	Thach Auditorium Auburn Ala.
	26	Mid-West Section AATCC	Bismarck Hotel Chicago, Ill.
Nov.	14-16	AATCC National Convention	Hotel Statler Boston, Mass.
		1958	
Jan. 30-Feb. 1		Textile Div., American Society for Quality Control annual conference	Clemson House Clemson, S. C.
Feb.	12-14	Cotton Research Clinic	Carolina Hotel Pinehurst, N. C.
Apr.	10-12	American Cotton Manufacturers Institute annual meeting	Hollywood Beach Hotel Hollywood, Fla.
	21-22	National Association of Hosiery Manufacturers annual meeting and Hosiery Industry Conference	Hotel Roanoke Roanoke, Va.
	23-26	Cotton Manufacturers Association of Georgia	Boca Raton Hotel & Club Boca Raton, Fla.
30-May 1		The Fiber Society	Clemson House Clemson, S. C.
Sept.	25-26	Northern Textile Association	Wentworth-by-the-Sea Portsmouth, N. H.
Oct.	6-10	Southern Textile Exposition	Greenville, S. C.
30-Nov. 1		AATCC National Convention	Hotel Conrad Hilton Chicago, Ill.

what are you doing to

CUT EXPENSES and BEAT COMPETITION ?

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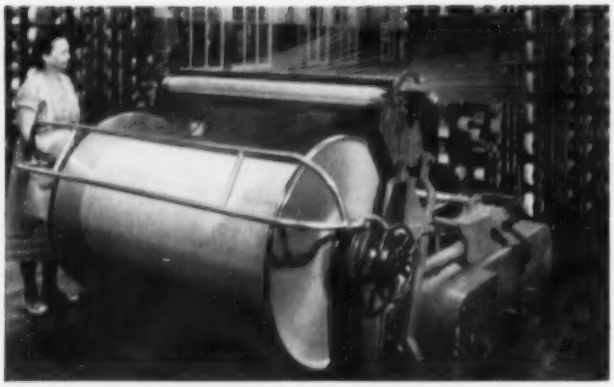

This Hayes Giant 38" x 54½" Aluminum Section Beam for cotton and spuns improves efficiency, cuts expenses and helps mills beat competition.

One 38" Hayes Beam does the work of two 28" beams.

Saves one-half the handling time.

You handle half as many beams for the same production.

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Balanced to run up to 1,000 yards per minute without objectionable vibration.

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Seventeen mills in the United States and Canada have purchased production quantities of this Hayes Giant 38" Aluminum Section Beam, especially designed for cotton.

And here are actual figures from one large cotton mill, showing yarn put on this Hayes Giant 38" Aluminum Section Beam. *NOW!* If these figures show an advantage in savings and increased production for *YOU* and *YOUR MILL*, we suggest your serious consideration of *HAYES BEAMS.*

Write us about your needs today.

WARP	ENDS PER BEAM	YDS. ON BEAM	* YDS. ON CHEESE	WEIGHT OF YARN
30S	416	68,000	136,000	1164 lbs.
26S	356	64,000	128,000	1043 lbs.
24S	369	60,000	120,000	1098 lbs.
22S	377	56,000	112,000	1142 lbs.
19-5S	384	50,000	100,000	1172 lbs.
13S	350	36,000	72,000	1152 lbs.

* 6 lb. Cheese

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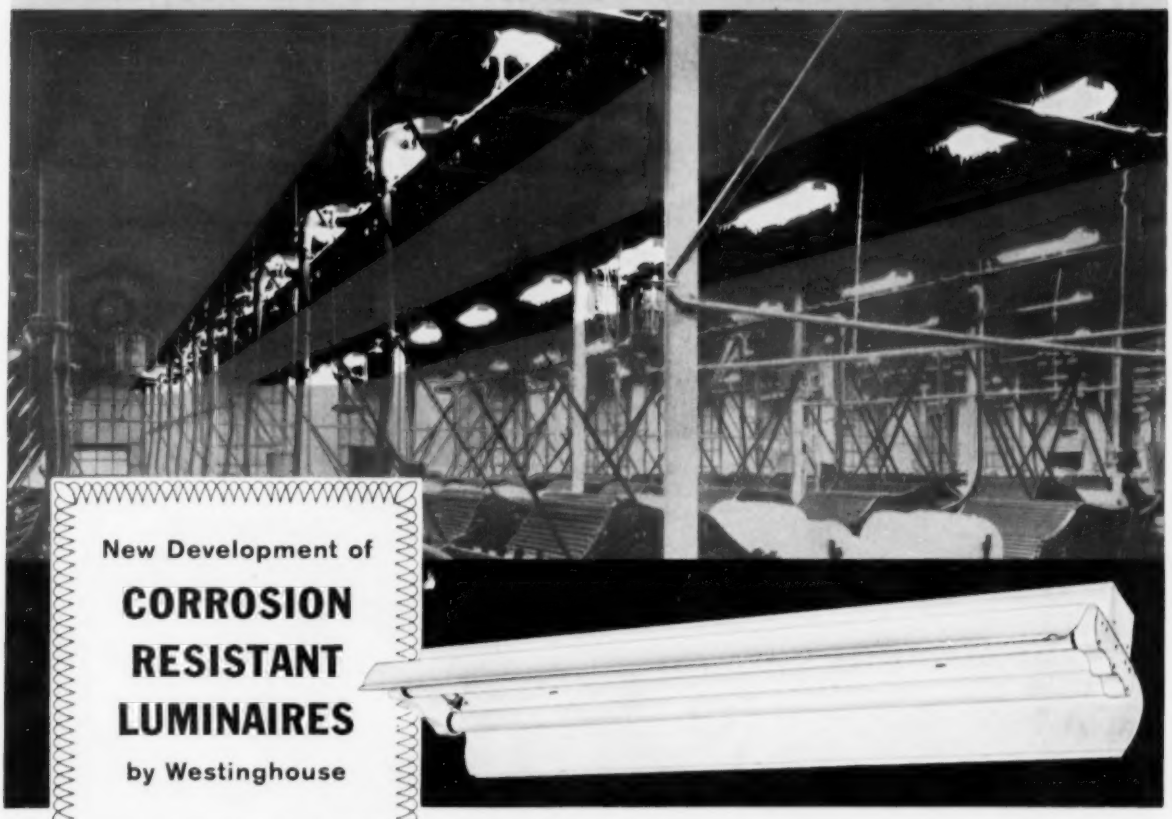
Every Plant has some areas where
CORROSIVE ATMOSPHERE CREATES CRITICAL HAZARDS LIKE THESE!



New Development of

CORROSION RESISTANT LUMINAIRES

by Westinghouse

CUTS LUMINAIRE REPLACEMENT COSTS UP TO 75%

Luminaire fabrication with stainless steel—brass and porcelain enamel—proves far more immune to vapors — fumes! Outlasts conventional fixtures 3, 4 and 5 times!

Astonishing numbers of plants today sustain corrosive atmospheres, that are *devastating* to ordinary luminaires! Authorities say there is erosive contamination — excessive corrosive steam — virulent moisture in the air of *virtually every* modern manufacturing operation!

These conditions, they say . . . *"Ravage* materials usually used in making most, common, industrial luminaires . . . resulting in *exorbitant* luminaire replacements costs! — or, the constant threat of short circuits . . . the costliness of corroded substance dripping into product-in-process . . . *even the threat of entire luminaires dropping into machinery—onto workers themselves!"*

In order to help avoid this, Westinghouse has now developed CORROSION-RESISTANT LUMINAIRES — end-plates of nickel-plated brass, stainless steel hardware, porcelain-enameled channels and reflectors, heavy-duty, brass-enclosed lamp-holders—with *all* components as *corrosion-free* as modern metals permit! These materials withstand *severest* corrosive atmospheres. They create luminaires outlasting conventional units 3 to 5 times! And frequently cut replacement costs *up to as much as 75%!*

Your Westinghouse Lighting Specialist is thoroughly prepared to survey *your* plant situation — to recommend *squarely* whether or not *your* operation would benefit from CORROSION-RESISTANT LUMINAIRES. Call him *today*! You *may* benefit *tremendously!*

J-04413

YOU CAN BE SURE...IF IT'S

Westinghouse

Uses Skyway For Handling Materials AUTOMATICALLY

Completely Pays for Itself Every Three Years

◀ Loading a van on the second floor of a building. This same van also may be lowered to the floor below for loading. Although the building at this end of the system is quite old, the Cleveland Tramrail equipment was easily installed.

For years this vast roof area did nothing more than provide protection from the weather. Now it is being used profitably for materials handling. Illustrated is the van emerging from the penthouse. ▼

BY erecting a Cleveland Tramrail materials handling system over the roofs of its buildings, a large plant is able to transport materials between departments located in widely separated buildings at very low cost.

Because the system operates automatically, the Tramrail carrier travels back and forth without any operator. The carrier van is loaded or unloaded at convenient areas inside the buildings. Pressing a button sends it on its way. It rises vertically to a penthouse on the roof. Then it makes its run over the track system to the penthouse at the other end. Here it lowers to the floor inside for loading or unloading.

The system eliminates considerable floor traffic and saves space required for wide aisleways. It operates at any time, day or night. Inclement weather does not hinder it. The system requires only a fraction of the maintenance necessary for floor handling equipment. It does not wear or damage floors. It is a big aid to safety. In addition to these important benefits, the Cleveland Tramrail system makes tremendous time savings — enough to completely pay for the entire installation every three years.

Cleveland Tramrail has had wide experience in automatic dispatch materials handling systems of many types. Our engineers will welcome an opportunity to work with you.

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Overhead Materials Handling Equipment

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A cotton bleachery can be a good neighbor—read how Hohokus Bleachery found

An answer to stream pollution

Staff prepared
Exclusive

A PLANT faced with a stream pollution problem must investigate many factors before it can decide on a plant and program for the treatment of its wastes. And perhaps the most important factor influencing the degree of waste treatment required is the stream itself, its volume, and the character of its water.

A plant located on the banks of a large river, for example, may discharge its wastes without overburdening the river; but a plant discharging similar wastes in comparable volume into a small stream might be faced with a pollution problem of major consequence.

The Hohokus Bleachery, Inc., Hohokus, N. J., is a plant located on a small stream in a non-industrial area that may be classified as highly residential. The Hohokus Brook, which supplies the bleachery with approximately 500,000 gallons of water per day, flows through the very heart of the Hohokus township and passes through woodland and residential areas for several miles to enter neighboring Ridgewood, where again it takes a winding course through residential areas to join the Saddle River, which ultimately empties into the Passaic River.

It is obvious that the pollutional effects of wastes discharged into the stream would be readily observed in the downstream communities. And while there are no industries in these downstream areas, and the Hohokus Brook, classified as non-potable, is not used by any of the municipalities as a source of drinking water, the pollution problem that faced the Hohokus Bleachery was by no means a lesser one.

One factor that accentuated the seriousness of the problem was the rise in population of the downstream communities. In the postwar period, housing developments began to appear along the banks of the Hohokus Brook. And in summer or dry spells, particularly, when the stream's flow was reduced to a trickle, its pollution was greatly intensified.

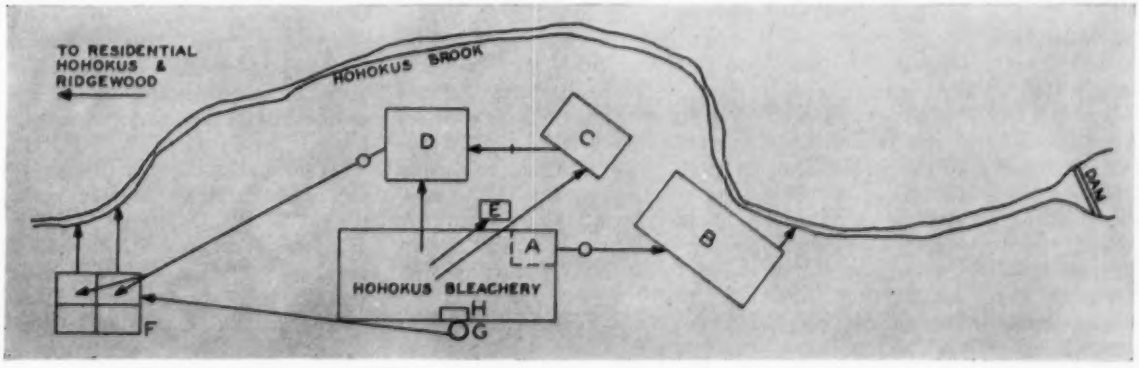
At such times, not only was the stream unable to sustain any kind of pollution load, with the result that vegetation and acquatic life were being destroyed, but the wastes produced objectionable odors to cause annoyance to increasingly larger numbers of residents.

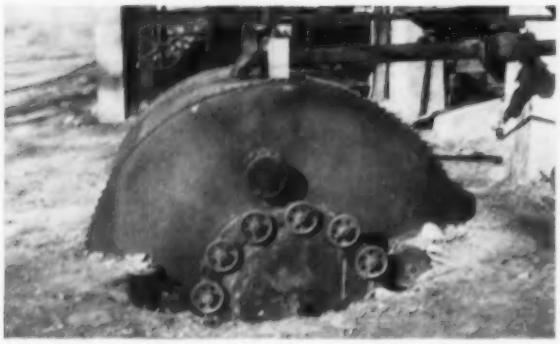
As a result, management found itself under great pressure to come up with a satisfactory waste treatment program in perhaps far less time than is normally available.

Early Measures Unsuccessful. But management had been in fact fully aware of the problem for many years, even prior to the rather sudden growth of the communities, and had continually made efforts to reduce pollution of the stream. But these measures could hardly be termed completely successful.

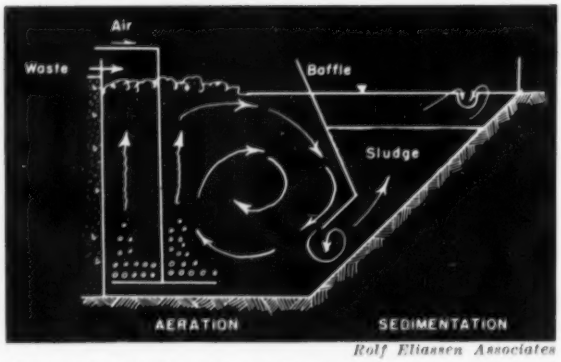
The processing wastes of the Hohokus Bleachery are common to

Map of Hohokus Bleachery, Inc., showing lagoons and waste treatment plant. A—Catch basin located in plant for weak wastes from plant operations. B—Lagoon for weak wastes from A; ultimately discharged into stream. C—Basin for strong wastes from finishing operations; these are pumped intermittently to D. D—Basin for desizing and caustic boil-off wastes; ammonium chloride and potassium phosphate are added here to supply needed nitrogen and phosphorus. E—Converted kier serves as collecting basin for concentrated dye wastes, which are taken off premises daily. F—"Hi-Lo" activated sludge treatment plant; two units have been installed to date. G—Air supply tank. H—Compressor. Each of the two units in operation can handle about 22,000 gallons of raw waste per day.





Converted kier serves as catch basin for concentrated dyeing wastes, amounting to about 800 gallons per day. These are removed from the premises daily.



Rolf Eliassen Associates

Diagram of "Hi-Lo" activated sludge treatment plant. In the aeration section, microorganisms feed on plant wastes under turbulence; quiet sedimentation section allows separation of clear effluent.

any plant carrying out bleaching, mercerizing, dyeing, and finishing operations. Each of these contributed in some degree to the pollution load of the stream, bringing about (a) oxygen depletion and consequent destruction of stream life, (b) unsightly discoloration, and (c) odor formation.

Essentially, the treatment carried out prior to the installation of a waste treatment plant consisted in collecting all plant wastes in a catch basin (Figure A on map) and then pumping these to a large lagoon (Figure B on map) from where they were ultimately discharged into the stream. This treatment proved inadequate as the slow, unaided processes of nature could not successfully treat larger volumes of wastes.

It became apparent that outside consultants would have to be called in and management engaged Rolf Eliassen Associates of Winchester, Mass., industrial waste consultants, to investigate the problem and recommend a suitable waste treatment plant and program.

Investigation Points to Biological Oxidation of Wastes. In the beginning, the investigation focused on possible in-plant measures to reduce the biochemical oxygen demand (B.O.D.) of the wastes before discharge into the stream. In the bleaching operations, where warp sizing materials are removed through enzyming and caustic boil-off operations, no measures were possible and the wastes, alkaline in nature, containing starches and starch products would have to be treated. The same was found true of finishing operations. While synthetic resins are employed to a large extent in finishing, many of the formulations are based on starch products, inherently high in B.O.D. Some thought was also given to substituting synthetic finishing compounds of much lower B.O.D., but these were ruled out because of their prohibitive cost.

The dyeing wastes, on the other hand, offered a simple way out. From the standpoint of economy, it was decided to remove the concentrated dyeing waste residue, amounting to approximately 1000 gallons per day, off the premises. A discarded kier (see photograph and location E on map) was converted into a collecting tank for the concentrated (unexhausted) dye liquors from the jig operations. Hohokus Bleachery uses vats and naphthols principally, and they are applied only on the jig.

The first experimental treatments of the wastes of bleaching operations (which are of the continuous peroxide type) and finishing operations (for the most part starch back-filling) were based on chemical reactions such as precipitation, neutralization, and the like. But these various treatments, apart from being economically prohibitive, were not the complete answer to the problem at Hohokus.

Further investigation pointed to the necessity of a biological oxidation treatment of the wastes and accordingly a pilot plant employing a unique, entirely different concept, was designed and put into operation.

The principal feature of the plant which contrasts it from conventional waste treatment plants is in the technique of feeding the raw wastes. These are fed across the length of the tank (see photograph and drawing of aeration section) allowing microorganisms to grow up to equilibrium. No excess sludge is produced in the tank, which is designed to treat a definite number of pounds of organic matter per day.

In time, basic design changes were made in this pilot plant to increase the amount of raw waste that it could treat by about 50%. Since June 1956, two such plants have been operating successfully; the latter incorporating the latest design changes, with concrete foundations already laid for two additional plants if needed.

Details of Waste Treatment Process. As shown on map, the strong wastes of processing (D) are fed into each of the two plants at a rate of two cubic feet per minute. Simultaneously, compressed air is pumped at a rate of 200 cubic feet per minute, likewise into each plant. In a biological oxidation treatment of wastes, the elements nitrogen and phosphorous are required. As these are not present in the processing liquors, ammonium chloride and potassium phosphate are added to the collecting basin (D).

In the aeration section, seeded only at the start with activated sludge to introduce favorable microorganisms, a continuous turbulence takes place, resulting in a

Aeration section: raw waste is fed across its length from basin D (see map), allowing microorganisms to grow to equilibrium. Plant is seeded with activated sludge at start, is then self-operating.

Sedimentation section of the "Hi-Lo" activated sludge treatment plant, showing clear effluent that flows into the weir (center) and is discharged into the stream.

uniform concentration of wastes that are fed across the length of the tank.

A baffle of unusual design makes possible sedimentation of the sludge in the adjoining quiescent section with the clear effluent appearing at the top. The effluent flows into a weir and is discharged into the stream.

The B.O.D. of the incoming raw plant wastes fluctuates somewhat from day to day, reaching at times a value as high as 1,000 ppm of oxidizable matter; though its average value runs much lower. The treatment plant reduces this figure below the prescribed limit of 50 ppm; at times reducing it to 20 ppm.

The plant is also designed to take raw wastes of fluctuating pH up to 12, without any prior chemical neutralization. The effluent has been running consistently at pH values between 7.9 - 8.3.

Maintenance and Process Control. Maintenance and control of the waste treatment process require about one man-hour per day. Maintenance, which consists largely of inspection, includes the following:

(1) Inspection of air compressor.

(2) Inspection of raw waste pump.

(3) A check on flow rate of wastes to treatment units.

(4) Removal of leaves and other matter from surface of sedimentation tank.

Laboratory control, which serves as a check on the plant's operation, consists of two test procedures:

(1) Measuring pH of effluent.

(2) Observing percentage of settled solids (in 100 cc glass cylinder) after a period of ½ hour.

A pH value substantially above 8.0 would indicate that the plant was not functioning properly. But the more significant control is the settling test. A sample of the wastes undergoing treatment in the aeration section is poured into a 100 cc glass cylinder. After 30 minutes, the amount of settling taken place is noted. If the amount of solids appearing in the cylinder exceeds 90% of its volume, it is an indication that the rate of raw waste flow from D must be decreased.

Economics of the Process. From an economic standpoint, the plant, first such installed in the industry, is one-third the cost of conventional waste treatment plants, according to E. R. Rand, general manager of Hohokus Bleachery.

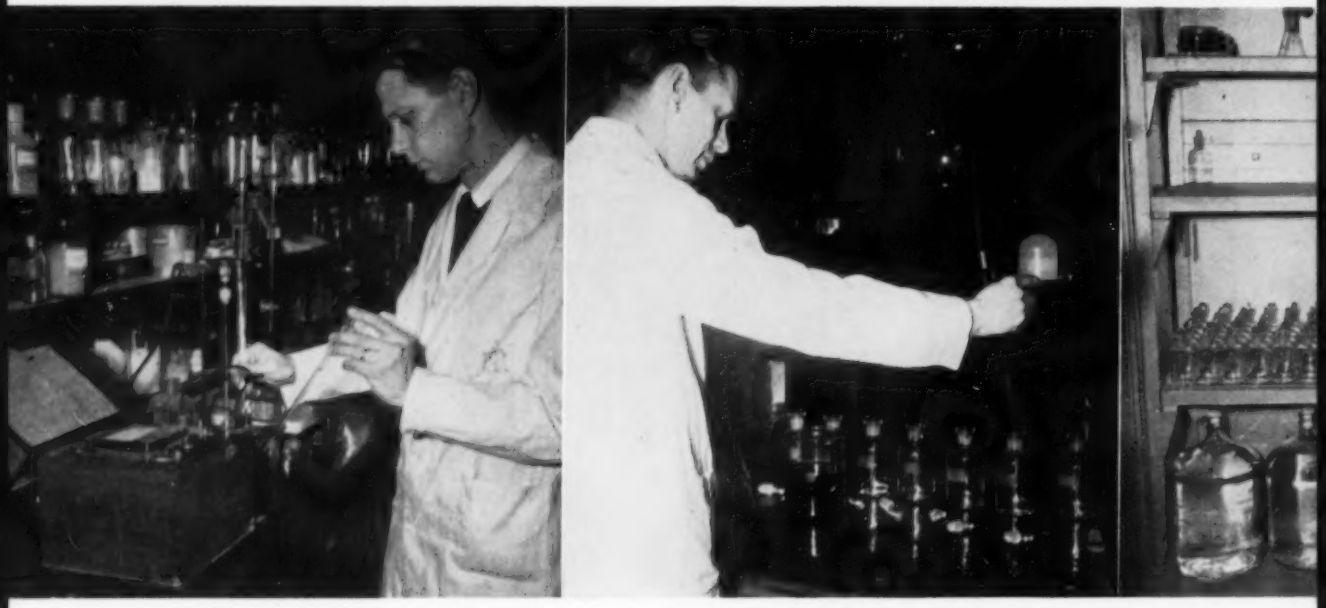
What makes the process economically attractive is that there is no accumulation of activated sludge requiring removal and additional costly treatment. And the basis of its plant design is for complete oxidation of the organic matter, using the dichromate oxygen demand test to measure the strength of the waste rather than the five-day B.O.D. test.

Dr. Ross McKinney, of Rolf Eliassen Associates, designers of the plant, places the cost of a plant capable of treating 1,000 lb of oxidizable matter per day at $20,000; with an operating cost, including power and chemicals but not labor, of $2.50 per 1,000 lb of oxidizable matter.

Employing round figures, each of the two tanks in operation is capable of treating approximately 22,000 gallons of raw waste per day, to make a combined total of 44,000 gallons of effluent discharged into the stream daily.

Perhaps the most significant aspect from a community standpoint, pointing to the success of the waste treatment program, has been the appearance of fish and vegetation last summer; this in a period when the Hohokus Brook is normally at its lowest rate of flow.

The pH of a sample of undiluted textile waste is adjusted (left) to a value between 6.5 and 7.5 by Dr. M. C. Rand of the Department of Sanitation, Rutgers University. Center: B.O.D. dilution water is added to bottles containing measured volumes of neutralized waste. Right photo shows walk-in incubator in the author's laboratory, where samples are kept at 20 C for five days. Residual dissolved oxygen is



The B. O. D. test in textile

by H. Heukelekian

Department of Sanitation
Rutgers University
New Brunswick, N. J.

Exclusive

THIS PAPER is designed for those textile mill chemists who desire a greater familiarity with the biochemical oxygen demand (B.O.D.) test. In this general background discussion of the bases and principles of the test and its pitfalls, errors, modification, and limitation, reader familiarity with the procedures described in Standard Methods (1)* is assumed. A thorough discussion of the basic principles of the test can be found in Phelps (2) and Heukelekian (3, 4).

Artificial waste treatment or natural self-purification processes in streams of unstable organic matter under aerobic conditions are dependent upon biochemical oxidation brought about by bacteria and other microorganisms. The utilization of food with simultaneous consumption of oxygen are dependent on the multiplication of microorganisms. None of these three intimately related phenomena (food, oxygen utilization, and multiplication) can take place in the presence of toxic materials, and all are affected by numerous variables.

The biochemical oxygen demand or B.O.D. test is a phenomenon of biochemical oxidation which takes place similarly under natural conditions in streams and in artificial treatment processes. In this test, since conditions are maintained at an optimum, the reaction can proceed undisturbed.

The B.O.D. is defined as the quantity of oxygen required during the stabilization of decomposable organic matter by aerobic biochemical reactions. Thus, it is a measure of the amount of oxygen required to stabilize and oxidize the pollutional material and it is by the same token a measure of the amount of biochemically oxidizable organic matter.

The method under discussion is referred to as the dilution method, because the sample to be tested is diluted with specially prepared water. The determination is based on the measurement of the dissolved oxygen in the mixture before and after the incubation period, usually for five days at 20 C.

Unlike such tests as chemical analysis, it is a biochemical re-

Paper of the Journal Series, New Jersey Agricultural Experiment Station, Rutgers University, the State University of New Jersey, Department of Sanitation, New Brunswick, N. J.

*Numbers in parentheses refer to literature references at the end of the article.

test is made

determined in samples after incubation. In right photo on this page, Dr. Rand titrates the sample, the final step in the determination of residual dissolved oxygen. Pitfalls and limitations of the test are discussed in the article. Complete details of the test are given in "Standard Methods for the Examination of Water and Sewage," published by the American Public Health Association.

mill waste problems

action subject to all the variables that influence such reactions.

Considerable discussion is available on the value of B.O.D., particularly as applied to industrial wastes. First developed and applied for domestic sewage and waters polluted with domestic sewage, the method was subsequently applied (rather blindly) to industrial wastes and the unsatisfactory results in some instances, cast doubt in some minds as to the value of the test.

With additional study it has been shown that certain variables affecting the results can be controlled and certain modifications can be introduced with greatly improved results. This does not mean that even today the determination can be applied indiscriminately to all wastes. Intelligent use of this method requires considerable understanding of basic principles of biological oxidations.

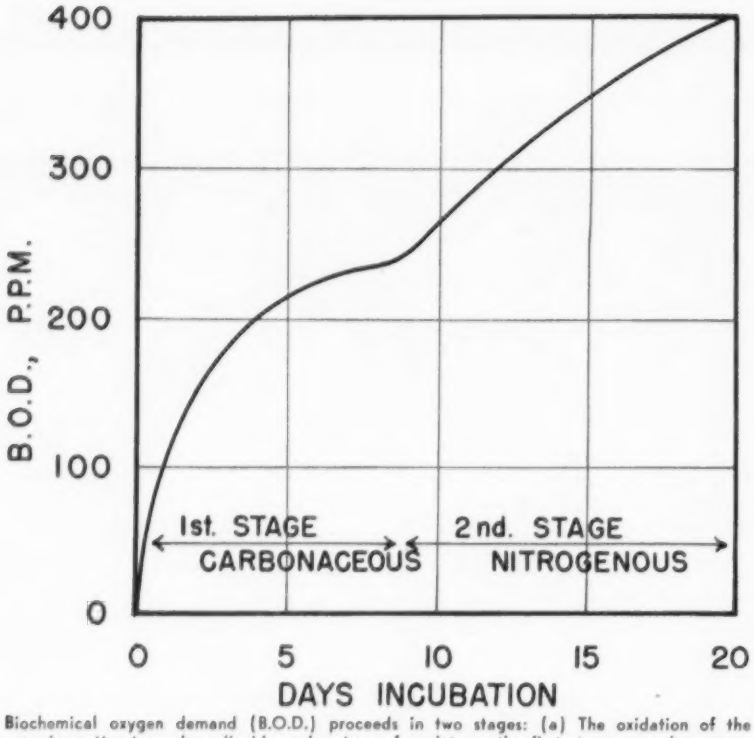
Discontent due to lack of proper appreciation of the nature of the determination has led some people to abandon it in favor of chemical tests. With some wastes, chemical tests may be the only answer, since no modification of the B.O.D. can make the test satisfactorily adaptable.

With these exceptions, chemical methods for evaluating the quantity of pollutional material, however, are not generally satisfactory because they do not simulate the oxygen consumption by biochemical processes. They either measure more or measure less than the oxygen utilization by biochemical agents.

The oxidizing power of a chemical oxidizing agent can be made to vary by (a) proper selection of the oxidant, (b) varying its concentration, or (c) varying the conditions under which the oxidation is performed. But no one has yet

It can be used to:

- *measure strength of waste*
- *design and operate waste treatment plants*
- *evaluate waste plant efficiency*
- *determine sources of B.O.D. in mill and chemicals used*
- *evaluate quality of mill effluents*
- *determine extent of stream pollution*
- *predict effect of pollution on a stream*
- *evaluate self-purification of a stream*



Biochemical oxygen demand (B.O.D.) proceeds in two stages: (a) The oxidation of the organic matter to carbon dioxide and water, referred to as the first stage or carbonaceous oxygen demand; and (b) The oxidation of ammonia to nitrite and nitrate, referred to as the second stage or nitrogenous oxygen demand.

developed a chemical determination by manipulating these three variables to simulate the biochemical oxidation of all types of organic compounds present in wastes.

It is not the total amount of oxidizable material, nor the chemical oxygen demand nor a certain arbitrary percentage of it that is important, but rather the amount of organic material that is subject to biochemical oxidation which is available to microorganisms as food and which exerts an oxygen demand. Until a better method is developed, the B.O.D. will continue to be used despite its imperfections and shortcomings.

Dependence of the B.O.D. on the Presence and Activity of Microorganisms—Seeding. In the determination of the B.O.D. of wastes which are partially or completely sterile, seeding is essential. If the sample itself does not furnish a sufficient number of microorganisms, a lag period after dilution of the sample results in a limited oxygen utilization until the microorganisms multiply sufficiently to exert their influence. To overcome this difficulty, the use of sewage to seed the dilution water is recommended. Since it contains a great variety of microorganisms it serves this purpose quite adequately.

The oxidation of some unusual organic materials, especially synthetic compounds not found in nature, may, however, be retarded by the absence or paucity in domestic sewage of microorganisms capable of oxidizing them. Under such conditions, low B.O.D. values will be obtained.

Some of these synthetic compounds are conceivably actually resistant to oxidation or contain no microorganisms capable of oxidizing them. Such a compound can be considered as not having a B.O.D., or the B.O.D. value obtained can only be considered valid after repeated tests with properly acclimatized seed.

An acclimatized seed may be developed as follows: An initial B.O.D. of the particular waste or compound is determined by the usual standard technique, using sewage as seed. Another portion of the waste or compound is seeded with sewage and aerated with frequent determinations of chemical oxygen demand (C.O.D.) according to the standard method. A decrease in the C.O.D. value indicates the oxidation of the material in question and, by the same token, a development of the microorganisms capable of oxidizing it.

A small portion of the waste, after a suitable period of aeration giving substantial oxidation, is then used as seed for a second series of dilution B.O.D. determination of another portion of the same waste. At the same time a portion of the aerated material is used to seed a fresh batch of the waste or compound. The aeration is continued and C.O.D. determinations are made as before.

The aerated material is again used as seed for dilution of B.O.D. determinations. The acclimatization process is indicated by increasing B.O.D. values after each "passage." Acclimatization is complete when upon two successive passages similar B.O.D. values are obtained after initial increases in the values.

On the other hand, if after three or four successive passages of the seed through the waste and the use of the seed developed for B.O.D. determinations, no substantial change in the B.O.D. of the material over the initial sewage seeded test is obtained, the initial value can be considered correct and acclimatization not necessary or the material resistant to oxidation. The waste under these conditions does not have a B.O.D. or has a low B.O.D., because there are no microorganisms capable of oxidizing it.

An illustration of interest to the textile industry is the use of C.M.C (carboxymethyl cellulose) in place of starch for sizing purposes. It has been shown that a substantial decrease in B.O.D. can be obtained by such a substitution, but it is not clear from the evidence whether or not the low B.O.D. values are the result of lack of acclimatization of seed.

The question is not academic nor is it merely whether or not a high B.O.D. value is obtained for

its own sake. If the B.O.D. values obtained are low because the sewage used for seeding material did not contain initially sufficient numbers of bacteria capable of oxidizing the compound, then the substitution of starch by C.M.C. may not result in a lowering of B.O.D. load in the treatment plant nor in the stream. In these situations eventually a suitable flora capable of oxidizing the C.M.C. may usually be expected and the resultant oxygen demand values exerted may be higher than indications obtained from the B.O.D. test.

Influence of the Environmental Conditions on the B.O.D. Biochemical oxidation may be retarded or inhibited by unfavorable environmental conditions. A sample may possibly contain an oxidizable material which cannot be oxidized, or possibly the full B.O.D. cannot be obtained because of some environmental factors unfavorable to biochemical reactions. The temperature, pH value, and toxicity are three important environmental factors which will be discussed in this connection.

The rate of biochemical reactions increases up to a certain value with increasing temperature. Further increase in temperature results in retardation and finally in inhibition and sterilization of the microorganisms. From the standpoint of B.O.D. determination and oxygen demand exerted under stream conditions, the temperatures involved range from 0 C to 35 C.

Two considerations must be taken into account in respect to temperature: (a) During the incubation it should be constant and known; for a standard test, a temperature of 20 C ± 1 C and a suitably sized electric refrigerator with a thermostat adjusted to maintain this temperature is generally used. (b) It is essential from the standpoint of predicting the oxygen utilization in the stream that the 20 C B.O.D. values as obtained in the laboratory should be convertible to any prevailing temperature in the stream. Fortunately such conversion can be made with fair reliability by using formula and temperature coefficients worked out for B.O.D. reaction rates.

The pH value affects the biochemical reaction rates. Generally optimum biochemical oxidization is obtained at a pH value of 6 to 8. These pH values must prevail during the B.O.D. test, and can be if the following precautions are taken: (a) When the pH value of the sample deviates materially from 6 to 8 then values can be adjusted towards neutrality by the addition of acid or alkali, as the case may be, before diluting the sample; and (b) To insure against the development of unfavorable pH values in the oxidation of the organic matter during the incubation of the diluted sample, the dilution water is provided with sufficient quantity of buffer (phosphates).

The third environmental condition is related to the inhibition of biochemical reactions due to the presence of toxic material. Toxic materials may be present in the dilution water or in the sample itself. The distilled water used should be checked to insure that it is free from copper, which poses one of the most common problems in respect to toxicity effect in the B.O.D. test.

Residual chlorine, if present in the distilled dilution water, can also cause difficulties. The toxicity that may be contributed by the waste itself is not as easy to detect or to eliminate. Since wastes may contain both biochemically oxidizable organic material and toxic materials, biochemical oxidation will depend on the relative concentrations of each.

The concentration of the organic matter determines the dilution which the sample must receive in the B.O.D. test, which in turn determines the concentration of the toxic material which will be obtained in the diluted sample. Let us assume that the concentration of the organic matter is relatively high and that of the toxic material is low. The dilution of the sample can be great enough under these conditions to bring the concentration of the toxic material down to a level which will not affect the biochemical oxidation.

The converse of this example is also possible; that is, when the concentration of the organic material is so low that the dilution is not great enough to lower the ultimate concentration of the toxic material, B.O.D. values which are not a true reflection of the amount of oxidizable material result. The analyst may be completely unaware of this situation.

There is also the possibility that if a number of dilutions are made for the B.O.D. test, the highest dilution may partially or completely overcome the effect of toxic concentration, while in the lower dilutions the B.O.D. values obtained may be influenced by the higher concentrations of the toxic material. Thus, B.O.D. values may decrease with lower dilutions, giving rise to what is generally referred to as "sliding scale." The B.O.D. determination itself may thus serve as an indication and as a warning of the presence of toxic material.

Two problems remain unresolved despite the usefulness of this situation: (a) What is the true B.O.D. to be reported, and (b) The absence of a sliding scale is no indication that toxic materials do not exist. It is the opinion of the writer that when a decreasing B.O.D. is obtained with higher concentrations of waste used in the test, then the highest B.O.D. value obtained should be reported rather than the average of all the dilutions, because that value is least affected by inhibiting influence of the toxic material.

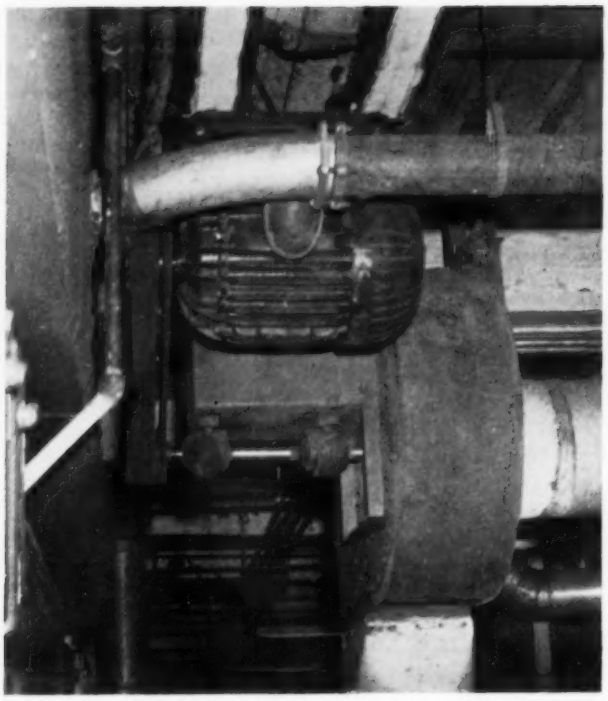
The B.O.D. is a measure of the amount of oxidizable material without interference from extraneous inhibiting influences, rather than a measure of the extent of such interference. Even when a sliding scale is obtained in a particular series of dilutions, the highest value obtained with the high dilution may not necessarily be the true value since, if a still higher dilution were used, an even higher value might possibly have been obtained. The absence of a sliding scale may not necessarily indicate the absence of any inhibiting agents in the waste.

It is important to determine whether a waste is amenable to biochemical oxidation prior to designing a biological treatment system, but it should be done on some other basis than the dilution B.O.D.

(Continued on page 117)

Know Your Fans and Condensers

Check these ways to test, select, and maintain them



Fan with air wheel on opening room transport.

by Dan McConnell
Consulting Engineer

Exclusive

THE FAN and condenser assembly is used throughout the textile industry for the transportation of staple stock; and this article is written to combine information on choice, application, testing, and maintenance that comes from many publications and from experience.

Since a large part of the trouble in stock-transport systems that resembles condenser trouble actually comes from the fans and their application, more time will be spent on fans and piping, and their testing, than will be spent on condensers.

There are two basic types of systems, sometimes called "suck" and "blow", but which are more properly called air and air-stock installations. The main differences between the two are in the location of the condensers and the choice of fan that goes with this location.

ON AN AIR SYSTEM, the fan handles air only, and furnishes a vacuum that reaches back through the condenser and the connecting piping to pick up the stock. Since the fan handles air only, the fan wheel or runner can be built for the most efficient operation.

The wheel must of course handle dust and any short fibers knocked out of the stock. This fiber does not have staple length enough to ball up or tangle and clog up the air passages of the wheel.

The fan wheel on the "blow" system, handles a mixture of air and cotton. The wheel must be made of a material which will not strike sparks when it is hit by sand or small stones that are riding with the cotton, must resist the abrasion of the stock and dust passing across it, and must be smooth in contour (no sharp corners to catch the stock and make tangles, curls, or "rat-tails").

VIRTUALLY ALL of the fans on cotton handling jobs are of two types of construction. Fans on air service are often made with a plate steel case (particularly in the larger sizes); and fans on air-stock service are almost universally of cast-iron case construction.

In the steel-plate construction there are many sharp angles and rough ends of fastening bolts that would catch the stock. Since the fans are always applying suction to the piping system they are built in single-end-inlet construction.

In cotton mill fans — and the Sturtevant "Monogram" line is an excellent example — a standard air wheel is made of riveted or welded steel plate construction. Shroud rings, on both ends of the blades, support the blades and furnish a guide for the air in passing through the wheel (to prevent eddies).

This is called the "Standard Wheel," and is the wheel on which all the rating tables are built. This is an important point to remember, as it will be referred to later on, and must be kept in mind when choosing fans or checking capacities.

Stock wheels are made of fabricated steel plate — not commonly used in cotton mills — and of cast iron and cast bronze. The wheels usually seen on stock service are

Condenser of the "pair-of-pants" air connection type.

Transport fans exhausting to dust house.

of cast bronze, since this material is tough to abrasion, will not strike sparks, and is less brittle than cast iron.

The virtue of this strength and toughness will be seen in checking over the table of allowable top speeds shown for Sturtevant fans. It should be noted that fans of other makes in general follow quite closely the data given for the single make, because through the years there has evolved almost a standard cotton mill fan, and almost a standard range of sizes. The majority of fans seen are in the range of sizes covered by the Sturtevant Monogram Design 3, sizes 6, 7, and 8.

As is to be expected of any rotating machine, fan wheels have top speed limits above which it is not safe to run them because centrifugal force tends to make the wheel fly apart. The limits of speed given in the table are those set by the manufacturer, and should be taken as safe limits. They are of course, calculated with a factor of safety, but it is not wise to exceed such.

Another factor that enters is that the effect of any imbalance is greatly multiplied at higher speeds, with an attendant increased—and hammering—loads on shafts, bearings, and fan supports.

When a fan-condenser job gives trouble, many people speed up the fan as the first and only step in fixing the trouble. It would be better to do some testing, and maybe repair some leaks or loose joints so the fan speed can be kept down.

IN GENERAL fans operate on the same type of characteristic curve as do centrifugal pumps; the lower the pressure, the greater the amount of air delivered; the higher the speed, the higher the pressure that the fan can put out.

The horsepower required to drive the fan is then related to the quantities of speed, pressure and flow of air. To add a further variable, the efficiency of the fan in converting power down the shaft to power in the air varies when either pressure, speed, or flow is changed.

Within the range of a 30% change in speed — unless the fan be applied close to its limit of capacity and pressure — changes can be calculated with good accuracy by applying the fundamental rule that with a change in speed the volume varies directly as the speed — 20% more speed, 20% more volume.

To illustrate: Let the speed of the fan before it is increased be represented by 100% or 1. Then an increase of 20% will find the new speed represented by 120% or 1.2. Thus if the static pressure varies as the square of the speed, the pressure rise is:

$$1.2 \times 1.2 = 1.44 \text{ or } 144\%$$

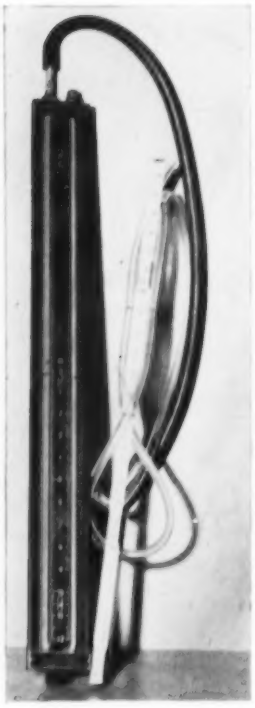
The power required varies as the cube of the speed, so, with an increase of 20% in speed, the power rise is:

$$1.2 \times 1.2 \times 1.2 = 1.738$$

Rounded to 1.74 this figure indicates that an increase of 74% in power is needed.

Because the power demand makes a big jump for a small speed change, the last change is the one that often "catches" the men who speed up the fan and hope the motor will take it.

THE BASIC EQUIPMENT need-



At the left is a commercial manometer. The one to the right is "shop made" as described in the text.

ed to get a picture of what a fan is doing is very simple; and the main measuring device can be made quickly in a mill shop if you are in a hurry and do not particularly want to "fine it down."

First, get a manufacturer's bulletin giving fan characteristics (the page covering No. 8 fans is reproduced in Table I).

Then get a manometer — like the one shown — or make one out of a piece of glass tube bent U-shaped and held onto a rule with rubber bands. Or get some clear plastic tubing of 3/16″ or ¼″ bore, and secure it to a rule with rubber bands or some sort of clamps. Make sure there is enough tubing on one end to set over a hole you will drill in the pipe to the fan, fill the U-tube about half full of water and you are ready to go.

Make the U-tube about 20″ long, since you will be reading pressures from about 4″ to 10″ of water, and it is embarrassing to make too short a tube and have it suck dry on you.

Drill a ⅛″ hole in the pipe on the inlet side of the fan at least three pipe diameters upstream of the fan inlet, and six to eight pipe diameters downstream of any elbows in the line.

If the elbows are too close to the fan for this, drill holes on each side of the pipe, read both sides, and average the readings. To prove something to yourself, put holes in the pipe just downstream of an elbow — one on the outside of the bend and one on the inside of the bend. Read the pressures on both and you will see how air "skids" around a turn.

Remember this: Suction is pressure too — it is a minus pressure, or one below atmospheric, and it takes power to make suction just as it takes power to make pressure.

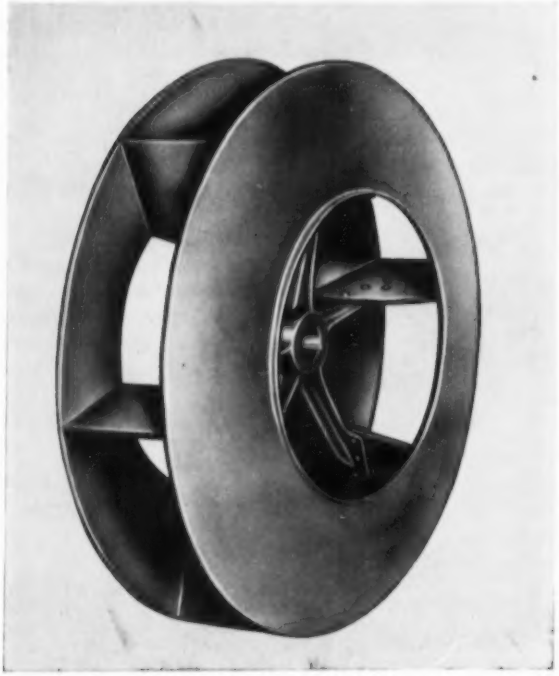
You read the pressure by placing the end of the tube connected to the manometer over the small hole you drilled and reading the difference in height of the water column in the U-tube. Note what this pressure is and where it was taken.

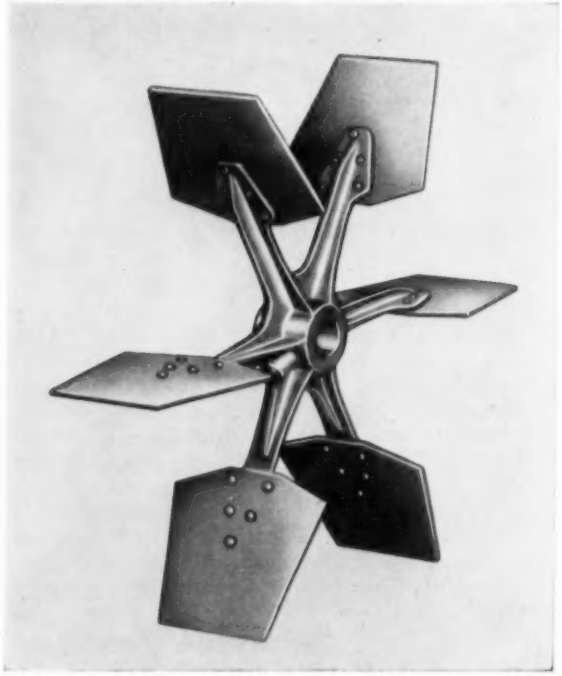
You will often find a fan with considerable suck on one side and a small amount of pressure on its discharge. The total pressure the fan is putting out is the sum of these two. A fan with 4″ suction and ½″ discharge pressure is working at 4½″ total pressure.

The water column is almost

The general purpose or standard wheel is pictured at the left here. Note that it is of side-plate construction with a cast malleable iron or fabricated steel spider. The long shaving wheel in the right photo is of the same design and construction as the standard wheel, but the side plates or wheel shrouds are left off.

Courtesy B. F. Sturtevant Div., Westinghouse Electric Corp.





never still when you are reading it, because there are a lot of eddies and surges in the air that is moving at high speed in the pipe. You have to use some judgment in averaging out the swings by eye.

Wide swings, incidentally, can often indicate trouble or possible trouble as something might be swinging loose and partly blocking the pipe somewhere, or big chunks of cotton might be partially blocking a pickup line from a feed belt and momentarily dropping the flow of air below a safe carrying velocity.

ANY MEASUREMENTS made on fan discharges should be made far enough away from the fan for the air to have a chance to "straighten" out in the pipe. The same is true on measurements made along pipe lines where there are bends or changes in diameter.

The only other measurement that must be made before you can check the fan by the table is the speed of the fan wheel in rpm. If the fan is hooked up so you can measure the motor horsepower on it, measure it. This is useful information as Table I gives the amount of air put out by a *standard* wheel at a certain speed and total pressure, and the power required by the fan. The table may not show the exact pressures and speeds you are dealing with, but you can split the difference between the figures in the table and get close enough for practical purposes.

AS YOU WILL NOTE, Table 1 is based on so-called "standard" air at a temperature of 65 F and a density of .075 lb per cubic foot. To be theoretically correct, volumes and pressures should be corrected for the actual temperature of the air being handled and its density due to altitude.

These factors are small, however, when compared to the errors made in measuring a surging pressure and for practical purposes the table will serve without correction for changes in the air. The corrections that must be applied for wheel type cannot be ignored.

The type of wheel in the fan must be determined. For cotton mill purposes the only wheels we can expect are standard wheels on air handling, and "wool" wheels where the fan handles stock.

Just where this "wool" name came from is not known, but it appears in fan catalogs published in 1910. And to carry the point that fans for cotton mill service are virtually standardized, it is interesting to note that a Sturtevant catalog published in 1917 lists the same range of fan sizes as is shown in one published in 1955 in the Monogram line.

The wheel diameters are virtually the same; and a check of the capacity charts shows that the fan characteristics of the old days were almost like those of today. The early designers did their work well; and if you happen to have a Design 2 fan — Design 3 is the one made today — the performance charts for the Design 3 will work for the Design 2 with no practical error.

The push imparted to air passing through a fan is related to the speed of the tip of the blade — more speed, more push. The tip speed is related to the wheel diameter — which is always measured across the tips — and the

The cast wool wheel pictured at the left is the type commonly used for stock handling. Usually it is made from bronze. Occasionally seen in cotton mills is the steel plate wool wheel pictured at the right. Older fans of this type were fabricated by riveting; newer ones by welding.

Courtesy B. F. Sturtevant Div., Westinghouse Electric Corp.

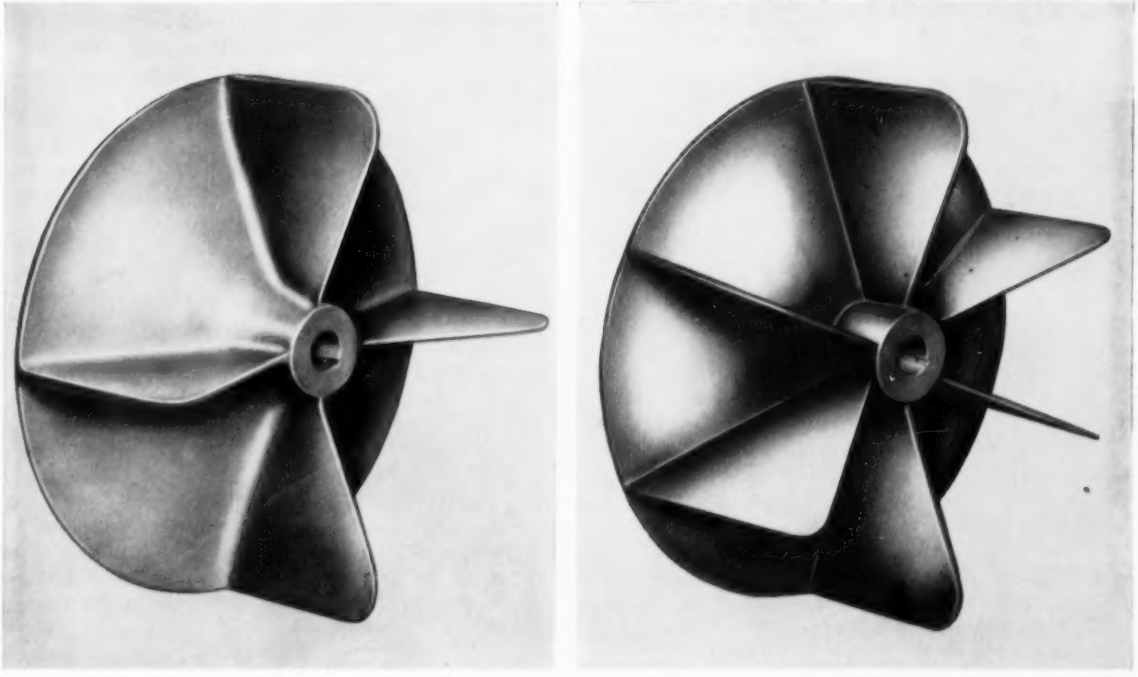


TABLE I. Amount of air discharged by a Sturtevant No. 8 Monogram fan when discharging air at 65 F and density .075 lb per cu ft against continuously maintained resistances.

R P M	Tip Speed F P M	S.H.D. in inches	S.H.D. H.P.	Volume C F M	H.P.	Volume C F M	H.P.	Volume C F M	H.P.	Volume C F M	H.P.	Volume C F M	H.P.	Volume C F M	H.P.	Volume C F M	H.P.
				Static Pressure 1" Water 578 vac. per sq. inch		Static Pressure 2" Water 1.16 vac. per sq. inch		Static Pressure 3" Water 1.73 vac. per sq. inch		Static Pressure 4" Water 2.31 vac. per sq. inch		Static Pressure 5" Water 2.89 vac. per sq. inch		Static Pressure 6" Water 3.47 vac. per sq. inch		Static Pressure 7" Water 4.05 vac. per sq. inch	
554	5000	1.98	0.03	4540	1.90	2320	1.15										
581	5250	2.18	0.04	4890	2.30	3130	1.55										
609	5500	2.39	0.04	5250	2.70	3700	1.95										
636	5750	2.62	0.05	5610	3.20	4270	2.40										
664	6000	2.85	0.05	5950	3.60	4660	2.85	2110	1.68								
692	6250	3.09	0.06	6300	4.15	5090	3.35	3300	2.40								
719	6500	3.34	0.07	6620	4.7	5520	3.9	3990	3.00								
746	6750	3.60	0.07	6950	5.3			4580	3.65								
775	7000	3.88	0.08	7270	5.9			5050	4.30	2890	2.85						
801	7250	4.17	0.09	7590	6.6			5540	4.95	3940	3.85						
830	7500	4.45	0.10	7910	7.5			5970	5.7	4610	4.65						
858	7750	4.75	0.11	8240	8.3			6380	6.4	5120	5.5	2660	3.35				
885	8000	5.07	0.12	8580	9.3			6810	7.4	5680	6.3	4060	4.85				
913	8250	5.38	0.14	8890	10.0					6150	7.2	4810	6.00				
940	8500	5.71	0.15	9170	11.5					6660	8.1	5410	6.9	2990	4.5		
968	8750	6.07	0.16	9520	12.5					7050	9.2	5970	8.0	4470	6.4		
996	9000	6.41	0.18	9880	13.5					7470	10	6470	9.1	5260	7.8		
1025	9250	6.77	0.19	10200	14.5					7860	11	6930	10.0	5810	8.9	3700	6.4
1050	9500	7.14	0.21	10560	16.0							7340	11.5	6360	10.0	4900	8.4
1075	9750	7.51	0.22	10800	17.0							7800	12.5	6660	11.5	5660	9.8
1108	10000	7.91	0.24	11100	18.5							8240	14	7340	12.5	6300	11.5
1135	10250	8.31	0.26	11400	20.0							8650	15	7810	14.0	6850	12.5
1165	10500	8.71	0.28	11700	22.0									8250	15.5	7340	14.0
1190	10750	9.14	0.30	12000	23.5									8690	17.0	7850	15.5
1220	11000	9.57	0.32	12300	25									9110	18.5	8290	17.0
1245	11250	10.00	0.35	12660	27									9510	20	8740	18.5
1275	11500	10.46	0.37	12900	29											9200	20.5
1300	11750	10.92	0.39	13200	31											9640	22.5
1330	12000	11.40	0.42	13500	32											10000	24

R P M	Tip Speed F P M	S.H.D. in inches	S.H.D. H.P.	Volume C F M	H.P.	Volume C F M	H.P.	Volume C F M	H.P.	Volume C F M	H.P.	Volume C F M	H.P.	Volume C F M	H.P.	Volume C F M	H.P.
				Static Pressure 8" Water 4.63 vac. per sq. inch		Static Pressure 9" Water 5.2 vac. per sq. inch		Static Pressure 10" Water 5.78 vac. per sq. inch		Static Pressure 11" Water 6.36 vac. per sq. inch		Static Pressure 12" Water 6.93 vac. per sq. inch		Static Pressure 13" Water 7.51 vac. per sq. inch		Static Pressure 14" Water 8.08 vac. per sq. inch	
1108	10000	7.91	2.4	4650	9.0												
1135	10250	8.31	2.6	5560	11.0												
1165	10500	8.71	2.8	6250	12.5	4340	9.6										
1190	10750	9.14	3.0	6850	14.0	5430	12.0										
1220	11000	9.57	3.2	7400	15.5	6250	14.0	4960	10.0								
1245	11250	10.00	3.5	7900	17.5	6920	15.5	5420	13.0								
1275	11500	10.46	3.7	8400	19	7500	17.5	6330	15.5	4960	11.0						
1300	11750	10.92	3.9	8880	21	8050	19.5	7020	17.5	5550	15.0						
1330	12000	11.40	4.2	9320	23	8550	21.5	7580	19.5	6430	17.5	4120	12.5				
1355	12250	11.87	4.5	9760	25	8990	23	8150	21.5	7180	19.5	5600	16.5				
1385	12500	12.35	4.7	10200	27	9450	25	8700	23.5	7800	22	6600	19.5	4300	14.0		
1410	12750	12.87	5.0	10600	29	9940	27	9180	26	8390	24	7360	22	5920	18.5		
1440	13000	13.36	5.3			10400	30	9650	28	8900	26	8000	24	6820	22		

speed at which the wheel is turning.

You will note from the table on wheel diameters that the wool wheels in the usual fan sizes are all smaller than the standard wheels, and must therefore turn faster to get the same tip speed. Also, the wool wheels all have fewer blades than the standard wheels. Therefore the fan wheel does not get as good a grab on the air passing through as would a standard wheel, and the fan operates at a lower efficiency.

To make the tables fit the performance of a fan with a wool wheel, some correction factors must be applied. These will be stated, and then worked through on some figures from practice.

DUE TO THE LOWER efficiency of the wool wheel when compared to the standard wheel, it is necessary to add 12% to the required static pressure before selecting the fan from the rating charts or tables. A standard wheel for this pressure is then picked on the basis of volume required, and its speed noted.

Since the wool wheel is smaller in diameter the speed of the wool wheel must be increased to give the same tip speed. This figure is obtained by multiplying the speed from the table by the ratio of the wheel diameters (standard wheel to wool wheel), and is always higher for wool wheels than for standard wheels.

The speed calculated should then be checked against the safe speed values for the type of wool wheel from the table. The power required by the fan is that of a standard wheel at the increased pressure and at the speed of the standard wheel first chosen, and before the diameter ratios are applied.

Given a system that requires 7500 cfm at a total pressure across the fan of 8" water, wool wheel to be used:

1. Increase pressure by 12% (1.12).

$$8 \times 1.12 = 8.96\text{"} \text{ or } 9.00\text{"}$$

2. From Table I, choose standard wheel for 7500 cfm at 9". This gives a No. 8 fan at 1275 rpm and 17.5 hp.

3. Tip speed of wool wheel most be made same as standard wheel — speed must go up since wool wheel is smaller:

$$1275 \text{ rpm} \times \frac{34.5\text{" std. wheel dia.}}{30\text{" wool wheel dia.}} = 1470 \text{ rpm}$$

This is above the safe speed of the wheel (which is 1270 rpm, Table II, for cast bronze wool wheel) so a larger fan must be chosen, the static reduced by larger duct, or the volume reduced by splitting the system between two fans. It may also be possible to use a booster fan in series to take part of the static pressure.

Given a No. 8 fan with a cast bronze wool wheel turning at 1460 rpm and delivering a total pressure of 8", speed and pressure measured on the job:

1. The wheel is above recommended top speed of 1270 rpm. Start looking for a booster fan, and find out who speeded the unit up and why.

Given a No. 8 fan like the example above, but turning 1200 rpm and delivering 7" total pressure, find cfm and horsepower:

1. Increase pressure by 12%

$$7\text{"} \times 1.12 = 7.85 \text{ — say } 8\text{"}$$

2. Find speed of standard wheel, which will be slower:

$$1200 \times \frac{30\text{"}}{34.5\text{"}} = 1040 \text{ rpm}$$

3. Look in Table I for a standard wheel at 1040 rpm and 8".

Here we find that the fan is delivering less than 4650 cfm and taking less than 9.0 hp, so the fan is large for the job and is loafing along.

Given the same fan at a pressure of 5" (Table I), we find a corrected pressure of 5.6" and a delivery that we must split some figures to get. The pressure we determine as before:

$$5\text{"} \times 1.12 = 5.6\text{"}$$

The given fan speed falls between the values of 1025 and 1050. There being no such fan speed listed, use the higher of the two listed values — 1050.

Opposite this value, and to the right under the column for fans of 5″ static pressure, the fan volume in cfm and the needed hp are given respectively as 7340 and 11.5. In the column for fans operating under 6″ of static pressure at the same speed, are the respective volume and hp figures 6360 and 10.

The pressure value calculated above as 5.6″ can be interpolated between the 5″ and 6″ readings as follows:

Subtract the lower volume figure from the higher;

$$7340 - 6360 = 980$$

Multiply by 0.6″ and add the result to the lower figure:

$$980 \times 0.6'' = 588$$

Added to the lower value of 6360 the result is 6948 cfm.

In a similar manner the required horsepower can be calculated, and the result of the calculation is 10.9 hp.

Now we can safely say that the fan is delivering 6950 cfm and requiring 10.9 hp to do it. Usually figures such as this can be split close enough for all practical purposes by looking at them, and there is no sense in trying to make calculations that are more accurate than the observations and measurements on which they are based.

FANS ARE rather high speed rotating machines, and keeping them in balance is important. This is particularly true with stock wheels which get a lot of abrasion from the stock going through them. This stock will actually wear them out of balance by the softer parts of the casting wearing away sooner than do the harder parts.

Fan balance can often be helped by mere static balancing with the wheel mounted in its own bearings. Take off the belts, spin the wheel, mark the heavy spot. Chip or file off a little metal or add weight to the light side. Spin again, and repeat the operation until the wheel will "die" almost anywhere.

Check the shaft for straightness, too. Quite often a bad case of vibration is caused by a bent shaft, or a wheel or bearing that has worked loose and is hammering around in the sloppy fit.

The best bet is to balance the wheel and shaft dynamically; since any rotating piece that turns above 500 rpm, and has a length of about half its diameter is a good candidate for this type of balancing. Just remember what balancing the front tires on your car will do for you, and fan wheels weigh as much as tires and turn much faster.

If necessary, the newer types of electronic car wheel balancers can be used for balancing a fan; and a truck-wheel balancer can also be "faked up" into an acceptable rig for balancing a wheel that is not too big.

When balancing a stock wheel it is best to add or cut off weight on the back side of the wheel plate, so there are no rough places on the working side to catch cotton. On air wheels, the balancing weights should be put in a place where they will not disrupt the flow pattern of the air through the wheel.

IN THE COTTON MILL, fans always work with duct lines and condensers. Some of the design minimums that are in accepted use are:

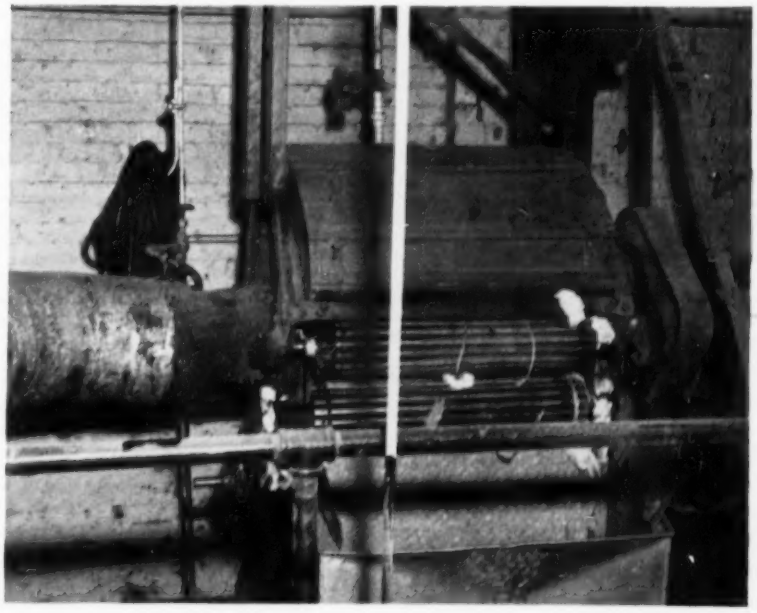
Minimum volume air for trans-

TABLE II. Specifications of Sturtevant Monogram Fans, Design 3.

FAN SIZE	MAXIMUM RPM						EXTREME WHEEL DIAMETER (INCHES)				OUTLET*		INLET
	STANDARD SIDE PLATES TYPE WHEELS		LONG SHAVING TYPE WHEEL (STEEL)	WOOL WHEELS			STANDARD SIDE PLATE AND LONG SHAVING TYPE	BUILT-UP WOOL TYPE	CAST WOOL TYPE	MAXIMUM WHEEL DIAMETER CASING WILL HOLD (SIDE PLATE AND LONG SHAVING TYPE)	OUTSIDE DIAMETER (INCHES)	INSIDE AREA (SQ. FT.)	OUTSIDE DIAMETER (INCHES)
	STEEL	BRASS		STEEL PLATE	CAST IRON	CAST BRONZE							
00	4980	3382	4980	-----	3700	4630	8 1/2	-----	8 1/2	8 1/2	4 1/2	0.10	4 1/2
0	4700	2860	4700	-----	3130	3910	9 1/2	-----	9 1/2	9 1/2	5 1/2	0.15	5 1/2
1	4250	3198	4250	-----	2800	3510	10 1/8	-----	10 1/8	10 1/8	6 1/2	0.20	6 1/2
2	3900	2838	3900	-----	2500	3120	12 1/2	-----	12 1/2	12 1/2	7 1/2	0.28	7 1/2
3	3040	2174	3040	3280	2060	2570	16	14 7/8	14 1/2	16	9	0.41	9
4	2710	1825	2710	3220	1875	2340	19	16	16 1/2	19	10 1/2	0.55	10 1/2
5	2395	1618	2395	2640	1560	1950	21 1/2	19 1/2	19 1/2	21 1/2	12	0.72	12
6	2060	1389	2060	2340	1350	1700	25	22	22 1/2	25	14	0.97	14
7	1612	1129	1612	1835	1130	1420	30 1/2	27	27	30 1/2	16	1.29	16
8	1440	1008	1440	1685	1020	1270	34 1/2	29 1/2	30	34 1/2	18	1.65	18

*OUTLET DIAMETER – The outlet diameter as given is measured outside the cast iron inlet. The outlet area is the inside area of the outlet used in computing capacities.

View of an end suction condenser in mill operation. Note necked-down connection where pipe leaves condenser.



porting cotton is 100 cu ft per pound of cotton handled.

Minimum velocity for cotton transport is 3000 feet per minute. This can be dropped to as low as 1700 fpm for small rates of a light and fluffy material such as reworked waste carried for distances not exceeding 200 ft.

Minimum duct diameter for cotton transport is 10 inches.

The illustrations show pressure and flow results obtained over several years testing of cotton transport lines in various mills.

The illustrations in Figs. 1, 2, and 3 show test results from operating cotton lines, and it is interesting to note how some of the wheel speeds exceed the recommended maximum. The fans so found had been speeded up arbitrarily to stop choke-ups, and without manometer or ammeter tests.

AS COTTON TRANSPORT lines age they acquire a lining of lint which gives a friction pattern that does not follow the curves for plain air. The pattern builds higher. It is therefore well to allow some room for power and speed in the original design choices, and to take care that the inside surface of the transport lines is made as smooth as possible.

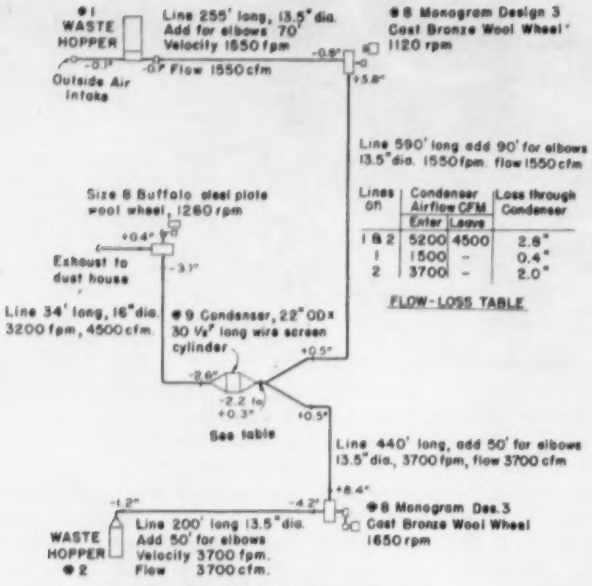
It is also well to make a long transport line work on the pressure side, as a pipe under a high suction will collapse if there is a choke at the entering end; and if the pipe runs outdoors the "breathing" action of the pipe as the suction changes will eventually break some of the soldered seams and suck water into the pipe in rainy weather.

Also, pipes which are picking up their air in a warm and humidified space will sweat on the inside in the winter if they are exposed to low temperatures (outdoor lines). This problem can be answered by arranging an outside air pickup for the transport air, or insulating the transport pipe so the inner pipe surface does not get below the dew point temperature of the contained air.

It will be observed from the test data — which are quite typical — that the friction loss across a condenser does not vary much for a considerable change in cotton

WASTE RETURN SYSTEM

FIG. 1

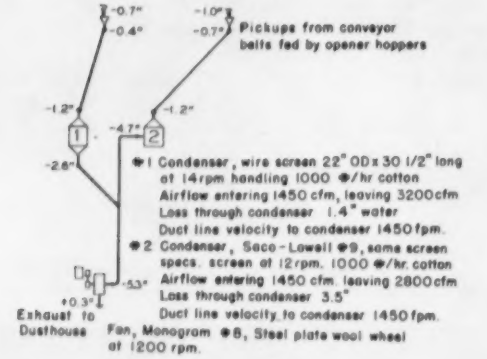

#1 WASTE HOPPER
Line 255' long, 13.5" dia. Add for elbows 70' Velocity 1550 fpm
#8 Monogram Design 3 Cast Bronze Wool Wheel 1120 rpm
Outside Air Intake
Flow 1550 cfm
Line 590' long add 90' for elbows 13.5" dia. 1550 fpm. flow 1550 cfm
Size 8 Buffalo steel plate wool wheel, 1260 rpm
Exhaust to dust house
Line 34' long, 16" dia. 3200 fpm, 4500 cfm
#9 Condenser, 22" OD x 30 1/2" long wire screen cylinder
See table
Line 440' long, add 50' for elbows 13.5" dia., 3700 fpm, flow 3700 cfm
#8 Monogram Des. 3 Cast Bronze Wool Wheel 1650 rpm
WASTE HOPPER #2
Line 200' long 13.5" dia. Add 50' for elbows Velocity 3700 fpm. Flow 3700 cfm.

Lines on	Condenser Airflow CFM Enter	Leave	Loss through Condenser
1 & 2	5200	4500	2.8"
1	1500	-	0.4"
2	3700	-	2.0"

FLOW-LOSS TABLE

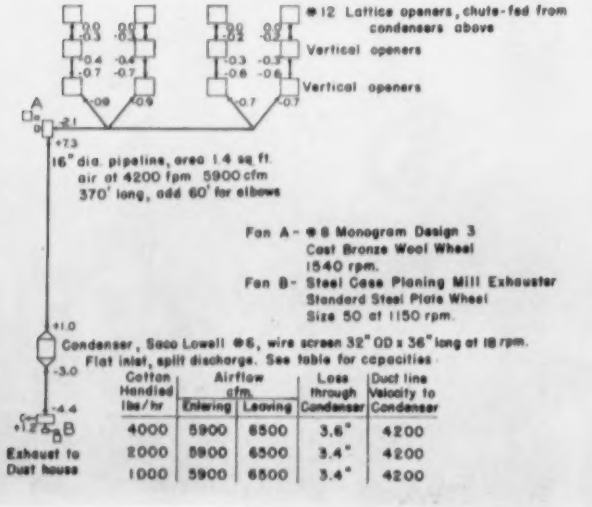
PICKUP FROM CONVEYOR BELT

FIG. 2


Pickups from conveyor belts fed by opener hoppers
#1 Condenser, wire screen 22" OD x 30 1/2" long at 14 rpm handling 1000 #/hr cotton
Airflow entering 1450 cfm, leaving 3200 cfm
Loss through condenser 1.4" water
Duct line velocity to condenser 1450 fpm.
#2 Condenser, Saco-Lowell #9, same screen specs. screen at 12 rpm. 1000 #/hr. cotton
Airflow entering 1450 cfm. leaving 2800 cfm
Loss through condenser 3.5"
Duct line velocity to condenser 1450 fpm.
Exhaust to Dusthouse
Fan, Monogram #8, Steel plate wool wheel at 1200 rpm.

COTTON TRANSPORT

FIG. 3


#12 Lattice openers, chute-fed from condensers above
Vertical openers
Vertical openers
16" dia. pipeline, area 1.4 sq ft. air at 4200 fpm 5900 cfm 370' long, add 60' for elbows
Fan A - #8 Monogram Design 3 Cast Bronze Wool Wheel 1540 rpm.
Fan B - Steel Case Planing Mill Exhauster Standard Steel Plate Wheel Size 50 at 1150 rpm.
Condenser, Saco Lowell #6, wire screen 32" OD x 36" long at 18 rpm. Flat inlet, split discharge. See table for capacities.
Exhaust to Dust house

Cotton Handled lbs/hr	Airflow cfm Entering	Leaving	Loss through Condenser	Duct line Velocity to Condenser
4000	5900	6500	3.6"	4200
2000	5900	6500	3.4"	4200
1000	5900	6500	3.4"	4200

loading. For purposes of calculation the condenser can be treated as an orifice of fixed size.

In Fig. 2 are shown two condensers of different type. One takes the air from the condenser through a "pair-of-pants" fitting that gives nearly a balanced flow from both ends of the screen. The other takes air through an elbow from one end of the screen. It would seem logical that there would be a higher loss through the elbow unit and tests show that there is. The results shown are fairly typical.

The resistance of condensers is also somewhat affected by the adjustment of the dampers; but this does not usually mean too much, as this adjustment must be made in a manner that will give the practical operating results required.

Instructions for Making Inquiries of Fan Builders

Parts for an old fan. Give size or model number, serial number (there usually is one stamped somewhere) and the kind of bearings used. A lot of old fans that left the factory with plain bearings have been converted to ball bearing in the field.

A new fan. Ask for a fan that will do a certain job such as "suck 800 pounds per nour cotton from opener hoppers through 200' 12" pipe with four 90° bends in it, give at least ¼" suction at the inlet and deliver through a No. 6 condenser, fan exhausting to a dust house." Ask for quotation giving speed and horsepower required. Or maybe "pick up half-dried dyed rawstock in an open pipe end at floor level and blow it 90' to an open bin delivering about a bale in 30 minutes."

A fan in trouble with poor delivery or choke-ups. Tell the builder how long the piping system is, the pipe size, manometer pressures from various parts of the system, fan speed, wheel type, and motor horsepower or current if you can get it.

Note: These fellows think in terms of wheel type, fan speed, horsepower required, and the resistance of piping and equipment to the flow of air measured in inches of water pressure. Asking an intelligent question is over half the battle of getting an intelligent answer.

THE TABLES in Figs. 1 and 3 show that more air leaves the condenser than comes to it when hooked up on a suck system, and this is as expected since there are a lot of air leaks around the damper and end seals on the screen. This quantity can be used as a quick and rough indication of something being wrong in the condenser if the value at which it has been running is known or is recorded.

Not many plants have flow measuring equipment, though it is not very expensive. On flow checking equipment the Pitot tube is best, as it does not get seriously plugged up with dust or lint — some of the mechanical meters that pass air through the measuring parts will get clogged. The Pitot tube is essentially a pressure measuring device reading on a sensitive manometer.

If the air speed in a cotton transport line is too low the material is not "floated" through the line but drops out of the air stream and rolls and slides along the bottom of the pipe. This can lead to chokes and wadded-up stock.

If the air speed is too high the stock is slapped onto the condenser quite hard and a lot of fibers go on through the screen with the dust that we want to shake out of the stock. Even at satisfactory velocities, the cotton in the air stream is going to ride on the outside of any bends in the pipe due to the action of centrifugal force; and it is important that the bends be made of as long radius as is practical, and as smooth as possible.

THE HOLE SIZE in condenser screens is related to the staple length of the stock being handled. When a fiber is being transported by a current of air it travels more sidewise than it does endwise, as in this way the air can get a better grip on the fiber since it is striking a larger area. The airplane designers call this "aspect ratio."

A screen that would handle a fiber an inch long satisfactorily would be a total loss on linters or napper flock as these fibers are short enough to go through the holes sideways. Such fibers do not felt too well.

A nonfelting fiber also will usually require a smaller hole, and this is often handled on condensers by making the screens of perforated metal rather than woven wire. The resistance of the condenser is of course related to the amount of open area in the screen.

A typical No. 9 condenser, with a perforated metal screen turning at 12 rpm, and handling 1000 pounds of cotton per hour, showed a pressure drop across the condenser of 6.7" at 2350 cfm entering flow. The same unit with a woven wire screen handling the same amount of cotton at 1450 cfm entering air had a drop of 3.5".

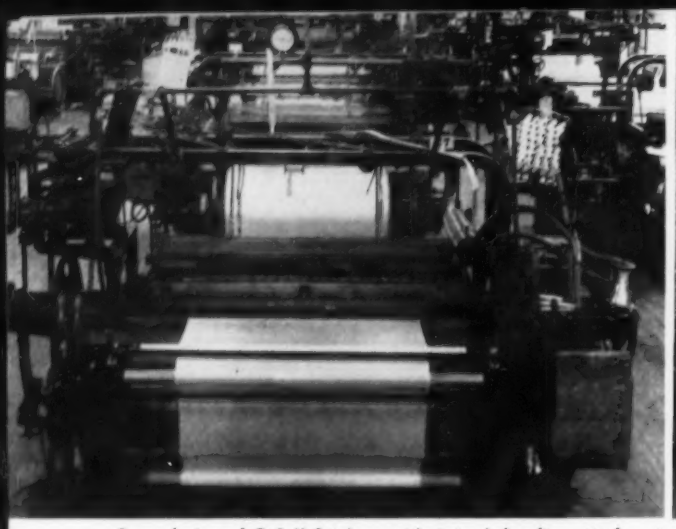
The same measuring equipment and thinking used on the transport fans and condensers can be applied to pickers. Some pressure checks with the manometer will tell you a lot about the air balance on the screens and the pressure conditions that the picker fan is working under.

These fans have a pressure-flow characteristic roughly paralleling that of a standard straight-blade air wheel of the same diameter; but are double-inlet units.

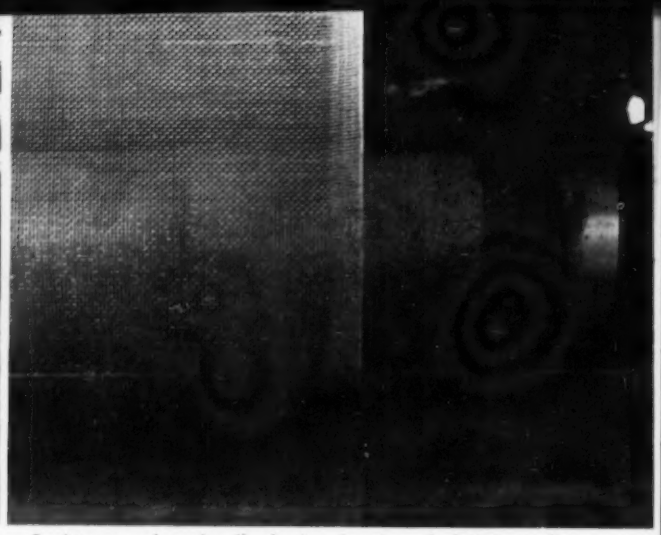
In sizing dust stacks and dust rooms, the air handled is taken as 1000 cfm per beater section with the fan running at 1000 rpm and discharging to a dust-house. Pressure measured in several satisfactory dust houses has been found to be from 0.1 to 0.22 inches, but it is always best to have this on the low side.

As of a rather recent date (last year) the numbering designation of the Monogram line of fans has

(Continued on page 88)



General view of C & K S-6 loom with Avisco's bonding attachment.



Emulsion trough and roll, showing location of slotted air line.

Weaving loom-bonded rayon scrim

Here's a way to prevent fabric distortion by locking yarns in place during weaving

by J. A. Roberts

Textile Research Department
American Viscose Corp.
Marcus Hook, Pa.

Exclusive

THE PAST few years have witnessed steadily increasing demands for woven materials meeting certain requirements for industrial applications. One of these deals with lightweight, open mesh, clean appearing fabrics, not readily obtained with conventional spun yarn scrim fabrics.

The obvious thought has been to investigate the possibilities offered by the use of continuous filament rayon yarns, to take advantage of their uniformity, cleanliness, and tensile strength, and their ability to meet the exacting requirements of weight, thickness, and tensile strength associated with mesh fabrics.

Initial weaving trials conducted with conventional methods soon revealed the necessity of deviating from standard weaving approaches. The inherent slipperiness of filament yarns caused excessive shifting and fabric distortion during weaving and in subsequent operations. It became apparent that a means of locking the warp and filling yarns in position, on the loom, before they had the opportunity to become distorted would have to be developed.

Fabric Bonding Device. A fairly simple attachment capable of binding the warp and filling yarns on the loom was designed by the American Viscose Corporation's Textile Research Department and adapted to a Crompton and Knowles S-6 model loom. It has proved to be both adequate and practical for the purpose.

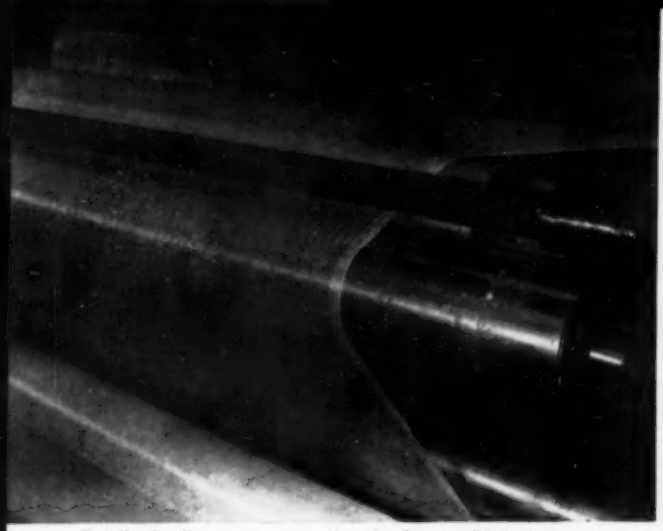
This attachment consists of a shallow stainless steel trough, about 3″ wide, placed in front of the breast beam. A smooth tubular stainless steel roll, about 2¼″ in diameter, revolving in the trough serves as an emulsion roll transferring the bonding liquid to the fabric as it passes over the roll.

The emulsion roll, as well as others to be mentioned later, must be hollow, lightweight, and free rolling to prevent any sliding action which might cause fabric distortion. The ends of the emulsion roll must be solution proof to prevent the build-up of bonding materials inside the tube, which could act as ballast. To prevent gumming, the ball bearings and mounts are set outside the trough.

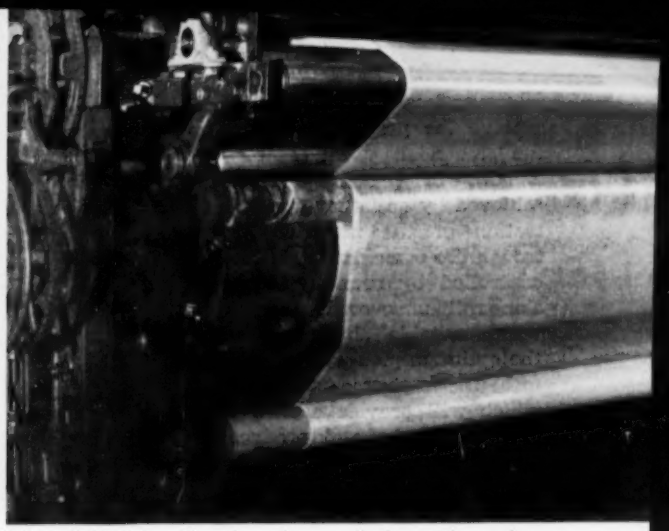
A means of circulating the bonding liquid should also be provided. The simplest method is a gravity flow system from an overhead storage container. Drains on the trough are desirable so the liquid may be removed and the trough cleaned during extended stoppage or at the end of a run.

If left standing any length of time, most bonding materials tend to solidify. When it is necessary to stop the loom for a short length of time, excessive sticking on the emulsion roll may be prevented by keeping the roll moist or raising the warp sheet off the roll.

A second roll, similar to the emulsion roll, is placed in front of the trough to serve as an upper



Detail of roll arrangement and path of scrim fabric being woven.



Hollow, lightweight roll replaces heavy roll above take-up drum.

breast roll. A third such roll replaces the heavy lower breast roll above the sand beam. All these lightweight, hollow rolls should revolve freely, for none of them are driven; they are turned merely through contact with the cloth. A slight drag at any point would cause slippage and distortion.

The attachment, as described and shown in the accompanying photographs, refers to its assembly on a Crompton and Knowles S-6 loom; however, the same basic principles are being successfully adapted to various models of Draper looms.

An auxiliary attachment, which has been found quite useful in improving the quality of fabric, is a slotted air line extending across the width of the loom and placed directly in front and above the emulsion trough. The air stream, blowing down through the fabric, not only removes excess bonding material, thereby preventing the formation of "window panes," but also serves as a drying assistant. Although it has been found that most of the lighter weight materials air dry sufficiently without auxiliary heating or drying attachments, the use of fans, heat lamps, or infrared units may be necessary on some constructions with heavy pick-up.

Points to Watch. The above mentioned loom attachment can be economically fabricated, is easy to install, and requires little or no maintenance. However, there are a few items in the actual weaving procedure which require some attention.

Loose picks and loopy edges are a constant threat. A normal to slightly heavy shuttle tension will be found desirable for best results. Temples cannot be used, and many of the fabrics are woven without selvages, using only catchcords or double ends. With the more difficult constructions, selvage posts may be useful to hold the fabric out to proper width. Then, since the use of a temple cutter is generally out of question, a scissors-type cutter must be provided to cut the filling at the transfer.

Formation of the warp beams must be exceptionally good, for uniform tension from end to end is essential for good weavability, especially with the low endage constructions. Shed timing and shed sizes must be properly adjusted and controlled to maintain uniform warp tension and prevent shifting and formation of an undesirable 2 x 2 effect in the filling. Warp let-off, controlled by the positive double acting type, has been found adequate in the majority of cases, although a rope or tension band type performs very satisfactorily on extremely low pickage fabrics.

The mechanical condition of the take-up motion also is quite important. A firm and uniform pull must be exerted on every end since each one is being taken up more or less independently. It may be found necessary to make some modification in the take-up gearing and in the cloth roll drive, depending on pickages and length of fabric cuts desired. In many instances, it has been found advantageous to take up directly on a shipping tube rather than to rebeam the fabrics later.

Aside from these few special setting requirements, looms weaving bonded scrim fabrics may be operated in a conventional manner for filament rayon yarns with only the usual precautions.

The bonding material must also meet certain requirements in order to be used efficiently and economically. The first requisite is that it form a firm, pliable bond merely by contact of one yarn with another. Its viscosity, at room temperature, must be suitable for transfer from an emulsion trough arrangement.

It should have a fairly rapid air drying rate to prevent excessive tackiness and sticking. Care must be taken to make sure that the bonding material is compatible with chemicals or other materials which may be used in subsequent processing of the woven material. Some bonding materials may actually act as pretreatments for the future operations. Any number of chemicals have been used successfully, but the most generally accepted are the latex base compounds, polyvinyl alcohol, and polyvinyl acetate.

The pick-up varies with each

fabric and is to be controlled to achieve the properties desired in the material. Control of the amount of pick-up is usually achieved by adjusting the concentration of the material in the trough. To some extent, it may be controlled by running the emulsion roll uncovered, or covered with a suitable fabric. In any case, the optimum pick-up is considered to be the least amount of material which will provide a firm bond, dry adequately, and produce the desired hand in the woven fabric.

It is realized that neither the idea nor the means of applying bonding materials during weaving are new, as attested by the fact that there have been one German, five British, and nineteen United States patents issued which relate to this type of operation. However, it is felt that the experiments and development work done by the American Viscose Corporation's Textile Research Department together with the projection of this experience into various weaving mills has helped in no small measure toward the success of scrim fabric weaving.

Fans and condensers

(from page 85)

been changed by the Sturtevant Division of Westinghouse. The old number sequence from the smallest to the largest was 00, 0, 1, 2, 3, 4, 5, 6, 7, and 8, covering a range of wheel sizes from 8¼" diameter to 34½" diameter.

The new numbering designation, in the same order, is 504, 505, 506, 507, 509, 510, 512, 514, 516, and 518. Note that the numbers 508 and 511 are not included in the sequence.

The Monogram name has been dropped (the units are called "Cast Iron Industrial Fans") the construction and mounting arrangements have been somewhat changed, and the equipment is covered by catalog 1130 which contains characteristic tables on the fans and friction data on ducts and fittings.

Use yarn constants to speed production

by Maley Chagro
Exclusive

ONE OF the many duties of the overseer in the spinning and twisting departments is that of production planning. This can be a production headache if it involves long drawn-out figuring, and can develop into a tedious chore that consumes valuable time in the every-day busy atmosphere of the overseer's tasks and routine. Any simplified schedule, therefore, which enables the overseer to determine rapidly his answers to production problems is of great assistance, but accuracy is always essential. Proven shortcuts are time-savers and, wherever possible, constants should be used to facilitate all production calculations.

The accompanying table of yarn count constants enables the overseer to determine quickly pounds per spindle on 100%, 40-hr basis. The formula used to derive the constants is basic and well-known. Thus, all figures opposite the 1s yarn are basic constants from which all other constants are derived.

It is also interesting to note that the 1s yarn count constants are basically hank constants too. These become relatively important where rates are promulgated in anticipation of possible hanks to be produced.

The basic formula (1" front roll diameter) is as follows:

$$\frac{\text{rpm front roll} \times 3.14'' \times 60 \text{ min} \times 40 \text{ hr}}{36'' \times \text{yarn count} \times 840} = \text{constant}$$

By substituting 1 for the rpm of the front roll and 1 for the yarn number, the basic yarn and hank constant is found:

$$\frac{1 \times 3.14 \times 60 \times 40}{36 \times 1 \times 840} = .249206$$

The division of .249206 by 2 will equal .124603, the yarn constant for a 2s yarn. All constants are multiplied by the rpm of the front roll for pounds per spindle, 100% 40-hr basis. Pounds per spindle (100%) times spindles per frame times efficiency equals pounds per frame (actual)for 40 hr.

The roll diameters used in the tables of constants cover practically all roll diameters in use today in spinning and twisting departments. The listed yarn counts, 1 to 80, also practically cover the range of yarn counts being spun today. All constants given in the tables were derived by dividing each count into the basic No. 1 constants.

Any overseer can, by following the principles as stated, revise the tables of constants to suit his weekly operating time. This can be achieved proportionately with the accompanying reference tables, or by substituting in the basic constant actual operating hours other than 40.

planning

The overseer will find that such a chart will not only prove invaluable when computing his frame production layout, but he can also add to it by selecting the yarn count constants relating to the counts he is spinning or twisting, and multiply the selected constants by his efficiency (frame), thus reducing his future production planning time.

For example, assume a 30s yarn, 110 rpm, 90% frame efficiency, 200 spindles per frame, front roll diameter 1". In the accompanying chart, under 1" front roll diameter and where row and column meet opposite 30 is the yarn count constant, .008307. Multiplying this constant by 90% will equal .007476. By simply multiplying 110 (rpm) times .007476 (efficiency yarn constant) times 200 (spindles per frame), the frame production is more quickly determined. Having these two constants (100% standard and efficiency constants) and others relating to the yarns being spun or twisted, in a ready reference file, will materially assist the overseer every time he plans his production requirements.

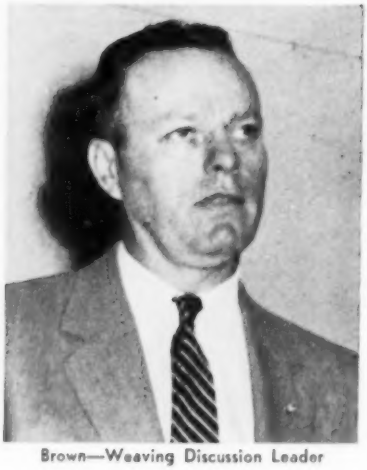
Determine constant under front roll diameter, where row and column meet opposite yarn count. Multiply constant by rpm front roll for pounds per spindle, 100%, 40-hr basis. Multiply quotient by spindles per frame times efficiency for pounds per frame (actual), 40-hr.

Yarn Count Spinning and Twisting Production Constants
(Basis: 40 hours Roll Diameters: 1" — 1½")

Count	Front Roll Diameters								
	1"	1-1/16"	1⅛"	1-3/16"	1¼"	1-5/16"	1⅜"	1-7/16"	1½"
1	.249206	.264780	.280357	.295932	.311508	.327063	.342658	.358234	.373809
2	.124603	.132390	.140179	.147966	.155754	.163532	.171329	.179117	.186905
3	.083069	.088260	.093452	.098644	.103836	.109021	.116219	.119411	.124603
4	.062302	.066195	.070089	.073983	.077877	.081766	.085665	.089559	.093452
5	.049841	.052956	.056071	.059186	.062302	.065413	.068532	.071647	.074762
6	.041534	.044130	.046726	.049322	.051918	.327066	.057110	.058039	.062302
7	.035601	.037826	.040051	.042276	.044501	.046723	.048951	.051176	.053401
8	.031151	.033098	.035045	.036992	.038939	.040883	.042832	.044779	.046726
9	.027690	.029420	.031151	.032881	.034612	.036340	.038073	.039804	.041534
10	.024921	.126473	.028036	.029593	.031151	.032706	.034266	.035823	.037381
11	.022655	.024071	.025487	.026903	.028319	.029733	.031151	.032567	.033983
12	.020767	.022065	.023363	.024661	.025959	.027255	.028555	.029853	.031151
13	.019170	.020368	.021566	.022764	.023962	.025159	.026358	.027556	.028755
14	.017729	.018913	.020026	.021137	.022251	.023362	.024476	.025588	.026558
15	.016614	.017652	.018691	.019729	.020767	.021804	.022844	.023882	.024921
16	.015578	.016549	.017522	.018496	.019469	.020441	.021416	.022391	.023363
17	.014659	.015575	.016492	.017408	.018324	.019239	.020156	.021073	.021989
18	.013845	.014710	.015575	.016441	.017306	.018170	.019037	.019902	.020767
19	.013116	.013936	.015756	.015575	.016395	.017214	.018035	.018854	.019674
20	.012460	.013239	.014018	.014797	.015576	.016353	.017133	.017912	.018690
21	.011867	.012609	.013350	.014092	.014834	.015574	.016317	.017059	.017800
22	.011328	.012036	.012744	.013451	.014159	.014867	.015575	.016283	.016991
23	.010835	.011512	.012189	.012867	.013544	.014220	.014898	.015575	.016253
24	.010384	.011033	.011682	.012331	.012980	.013628	.014277	.014926	.015575
25	.009968	.010591	.011241	.011837	.012460	.013083	.013706	.014329	.014952
26	.009583	.010184	.010783	.011382	.011981	.012579	.013179	.013778	.014377
27	.009230	.009807	.010384	.010960	.011537	.012113	.012691	.013268	.013845
28	.008900	.009456	.010013	.010569	.010125	.011681	.012238	.012794	.013350
29	.008593	.009134	.009667	.010205	.010742	.011278	.011816	.012353	.012890
30	.008307	.008826	.009345	.009864	.010384	.010902	.011422	.011941	.012460
31	.008039	.008509	.009044	.009546	.010049	.010550	.011054	.011556	.012058
32	.007552	.008274	.008761	.009248	.009735	.010221	.010708	.011195	.011682
33	.007855	.008024	.008496	.003968	.009440	.009911	.010384	.010856	.011328
34	.007330	.007788	.008246	.008704	.009162	.009620	.010078	.010536	.010994
35	.007130	.007551	.008010	.008455	.008900	.009345	.009790	.010235	.010680
36	.006922	.007327	.007798	.008220	.008653	.009085	.009518	.009951	.010356
37	.006735	.007156	.007577	.007998	.003419	.008840	.009261	.009682	.010103
38	.006558	.006966	.007378	.007788	.008198	.008607	.009017	.009427	.009337
39	.006390	.006789	.007189	.007588	.007987	.008336	.008786	.009186	.009186
40	.006230	.006620	.007009	.007398	.007788	.008177	.008566	.008956	.009345
41	.006078	.006058	.006838	.007219	.007598	.007977	.008358	.008737	.009117
42	.005933	.006304	.006675	.007046	.007414	.007787	.008159	.008529	.008900
43	.005795	.006158	.006520	.006882	.007244	.007606	.007969	.008331	.008693
44	.005664	.006018	.006372	.006726	.007080	.007433	.007788	.008142	.008496
45	.005538	.005884	.006230	.006576	.006922	.007268	.007615	.007961	.008307
46	.005418	.005756	.006095	.006433	.006772	.007110	.007449	.007788	.008126
47	.005302	.005634	.005965	.006296	.006628	.006959	.007291	.007622	.008126
48	.005192	.005516	.005841	.006165	.006490	.006814	.007139	.007463	.007788
49	.005086	.005404	.005722	.006039	.006357	.006675	.006993	.007311	.007629
50	.004984	.005296	.005607	.005919	.006230	.006541	.006853	.007165	.007476
51	.004886	.005192	.005497	.005803	.006108	.006413	.006131	.007024	.007330
52	.004792	.005092	.005391	.005691	.005991	.006290	.006590	.006889	.007189
53	.004702	.004996	.005290	.005584	.005878	.006171	.006465	.006759	.007053
54	.004615	.004903	.005192	.005480	.005769	.006057	.006346	.006634	.006922
55	.004531	.004814	.005097	.005381	.005664	.005856	.006230	.006513	.006797
56	.004450	.004728	.005006	.005274	.005563	.005840	.006119	.006397	.006675
57	.004372	.004645	.004919	.005192	.005465	.005738	.006012	.006285	.006558
58	.004297	.004565	.004834	.005102	.005371	.005639	.005908	.006176	.006445
59	.004224	.004488	.004752	.005016	.005280	.005543	.005808	.006072	.006636
60	.004153	.004413	.004673	.004932	.005192	.005451	.005711	.005971	.006230
61	.004085	.004341	.004596	.004851	.005107	.005362	.005617	.005873	.006128
62	.004019	.004271	.004522	.004773	.005024	.005275	.005527	.005778	.006029
63	.003956	.004203	.004450	.004697	.004945	.005191	.005439	.005686	.005933
64	.003894	.004137	.004381	.004624	.004867	.005110	.005354	.005597	.005841
65	.003834	.004071	.004313	.004553	.004792	.005032	.005272	.005511	.005751
66	.003776	.004012	.004248	.004484	.004720	.004956	.005192	.005428	.005664
67	.003719	.003952	.004184	.004417	.004649	.004882	.005114	.005347	.005579
68	.003665	.003894	.004123	.004352	.004581	.004810	.005039	.005268	.005497
69	.003612	.003837	.004063	.004289	.004515	.004740	.004966	.005192	.005418
70	.003560	.003783	.004005	.004228	.004450	.004672	.004895	.005118	.005340
71	.003510	.003729	.003949	.004168	.004387	.004607	.004826	.005046	.005265
72	.003461	.003677	.003894	.004110	.004327	.004543	.004759	.004975	.005192
73	.003414	.003627	.003841	.004054	.004267	.004480	.004694	.004907	.005121
74	.003368	.003578	.003789	.003999	.004210	.004420	.004631	.004841	.005051
75	.003323	.003530	.003738	.003946	.004153	.004361	.004569	.004776	.004984
76	.003279	.003484	.003689	.003894	.004099	.004303	.004509	.004714	.004919
77	.003236	.003439	.003641	.003843	.004046	.004248	.004450	.005652	.004855
78	.003196	.003395	.003594	.003794	.003994	.004193	.004393	.004593	.004792
79	.003155	.003352	.003549	.003746	.003943	.004140	.004337	.004535	.004732
80	.003115	.003310	.003504	.003699	.003894	.004088	.004283	.004478	.004673

General Chairman Smyth

Moody—Slashing Discussion Leader



Brown—Weaving Discussion Leader

Check Straps—endless

Alabama mill men recently gave their experience with them. They also discussed link-type parallels, the types of shuttles used, and loom parts life. Limitations of the various types of slashers were cited by one maker of this equipment.

Staff report

APPROXIMATELY 300 men attended the annual spring meeting of the Alabama Textile Operating Executives which was held in Thach Auditorium on the campus of Alabama Polytechnic Institute, Auburn, on May 4. The meeting was devoted to forums on slashing and weaving problems.

Sixteen mills, representing more than 1,000,000 spindles cooperated in preparing a question and answer brochure to be used as a guide in the proceedings.

General Chairman *Oliver Smyth*, Pepperell (Ala.) Mfg. Co., opened the meeting; *C. H. Moody*, Cone Mills Corp., Alabama City, Ala., led the slashing discussion; and *C. W. Brown*, Shawmut, Ala., plant of West Point Mfg. Co., led the weaving discussion.

Endless check straps. To the request that the plants give their experiences with endless check straps, to compare the life of the endless strap with that of the conventional one, and to report if the plants feel that one check strap gives advantages in supply costs and efficiency over the other, and to report loom speeds, models, and widths, nine plants reported either no experience or no data.

Of the remaining plants, *Mill D* feels that the endless strap will outlast the conventional one three to one. The plant operates 50″ X-2 looms at 165 ppm, and reports that the endless straps are turned weekly on the belief that the straps give better results if so treated.

Mill G reports that the endless strap has a life 22% greater than the conventional one, but costs more since the endless strap costs 104% more in the beginning. The plant operates 40″ X Model looms at 182 ppm.

Mill J is running the endless strap on all its X-2 looms, and thereby has no figures available for comparison on that block of looms. However, the plant feels that the endless strap is giving better results on that loom model than would the conventional.

While holding the belief that the endless strap gives the best results on the X-2 looms, the plant also feels that the conventional strap is more economical on the 40-inch X Model looms which are running at 182 ppm.

Mill K replied: "We have been using the endless check strap for several years on 32″ E, 32″ X, 40″ E, 44″ E, 40″ P, 54″ P, and 66″ P Model looms. We are using the conventional check strap on the 46″ X-2, 64″ X-P, 60″ X-2, and 96″ O. We think on certain type looms and on low picks per minute

New officers of the Alabama Textile Operating Executives are, reading from left to right: R. L. Alford, Dan River Mills, Inc., Montgomery, Ala., general chairman; Dwight Epperson, West Boylston Mfg. Co., Montgomery, Ala., general vice-chairman; Cleveland Adams, API, secretary and treasurer; W. N. Scroggins, Opelika (Ala.) Mfg. Corp., executive committee for three years; L. D. Sayers, Opp-Micolas Mills, Opp, Ala., executive committee for three years; and W. T. Curry, Cone Mills Corp., Alabama City, Ala., executive committee for three years.

vs. conventional

the endless check strap does an excellent job at less cost. On other groups due to high speed we use the conventional strap."

The endless strap will last two times as long as the conventional strap, the report continued. Loom speeds are: 32" E and X, 172 ppm, 40" E, 163 ppm, 40" P, 150 ppm, 44" E, 160 ppm, 54" P, 144 ppm, 66" P, 131 ppm, 96" O, 100 ppm.

"We feel the type strap you use should be determined from your actual operating conditions. What is good for one group of looms will not always be the best for another group," Mill K concluded.

Since tests are now in process, *Mill M* reported that there were no conclusive figures available. The tests are being conducted on 54" XP looms operating at 152 ppm, and from the limited data collected to date, indications are that looms equipped with conventional straps will give from .75% to 1% more efficiency than those equipped with the endless straps. The plant also reported that observations have disclosed that a consistently better boxing action is given by the conventional straps, and that they require less attention from the fixer. There are no figures available on which the plant can compare costs.

Link-type parallels. What experience have you had with the different makes of link-type parallels? (a) Which type gives the more parallel stroke?

(b) Which type does the best job at the least maintenance cost?

(c) Have you experienced any trouble with the different type bearings?

Only four of the 16 mills replying have had experience with the link-type parallel.

Mill H has 39 new X-2 looms equipped with the parallels, and so far the parallels are satisfactory.

Mill J has tried the parallels made by three different manufacturers. One make ran only 30 days; another ran 42 days. In the first instance the top lengths wore out on the parallel. In the second case a nut would not stay tight and the support for a spring stud wore to where it couldn't be kept tight. It gave bearing trouble.

The third model has been in trouble-free operation for four months.

Mill N has several parallels made by the same manufacturer, and has experienced no difficulties with them. They have not been in use long enough to permit management to establish maintenance costs.

Mill O is trying one type of parallel on a few looms, and has not reached any conclusion. The plant expressed the belief that the link-type has promise.

Parts costs and operating life. (a) What is your repair supply cost per 1000 loom hours of operation (exclusive of harness, reeds, haddles, drop wires, etc.)? (b) What is your loom hour operation life on (1) shuttles (2) pickers and (3) check straps?

For ease of reading and comparison, the results of the plant answers are listed in Table II.

Shuttles and filling. The plants were asked the following question:

(a) Discuss the type shuttle you use and why you use it. Give type of loom, loom speed, and shuttle life.

(b) What has been your experience with nylon monofilament replacing bristles and fur in the shuttles? Give yarn count.

(c) Discuss the type shuttle and shuttle eye that give you the best results when running ply filling.

(1) Give diameter of full quill of filling

(2) Length of quills

(3) Pounds per quill

(4) Filling stops per loom hour for three filling numbers—coarse, medium, and fine.

Mill B is using a molded shuttle on 40" Model E Draper looms running 168 ppm, but has not been running the shuttles long enough to evaluate their life. In six months of running the molded shuttles, eight shuttles have been replaced. These were thrown out of the loom and broken, or were broken on the start-up. On shuttles used previously, the life was 3000 loom-hours.

The plant uses nylon altogether in place of bristles, but still uses fur because of its longer life and the even yarn tension it is giving. The cost of the fur is reported less than that of nylon. Yarn counts range from 6s to 20s with no plied numbers.

The plants with experience in the use of nylon monofilament loops in place of bristles and/or fur are equally divided between satis-

Emmett Sharp, Micolas (Ala.) Cotton Mills, and Hobart Mardis, Cone Mills Corp., Alabama City, Ala.

From Muscogee Mfg. Co., Columbus, Ga., are Dewey M. Beavers and Russell Kellett.

L. D. Sayers, Opp-Micolas Mills, Opp, Ala., and Jim Jordan, Pepperell Mfg. Co., Lindale, Ga.

Howard Raney and P. W. Ellington, Huntsville (Ala.) Mfg. Co.

Burton Case and Elbert Whittendon, Huntsville (Ala.) Mfg. Co.

Marshall Walker and Grange Knight, Huntsville (Ala.) Mfg. Co.

fied and unsatisfied users. There seems to be no relationship between the filling counts and the success or failure of the nylon—the same range of yarn counts is sprinkled freely among the satisfied ones and those who prefer the time-tested bristles and fur.

The reasons advanced by the proponents of nylon include lower cost, better tension control, and the ability to change from singles filling to plied filling, or vice versa, without changing bristles.

On the other hand the reasons given for its failure include lack of tension control, ease of melting (in one case the molten nylon formed burrs which caused cut filling), breaking or burning out too rapidly, and wearing off at the shuttle wall.

In operating on ply filling, *Mill I* uses shuttle #1212-14, with shuttle eye #55 on 15/2 yarn. The quill diameter (full) is $1^{3}/_{8}$", quill length is $8^{3}/_{4}$", and filling stops per loom hour number 0.32.

Mill K gets best results from dogwood shuttles with a #85 brass eye, and uses flannel in the eye to help hold the filling. The plant also notes that a bristle can be put in this shuttle eye to eliminate unthreading and breaking. The diameters are listed in three sizes—small, medium, and large with the package weights listed accordingly. There is an additional breakdown concerning spun and quilled classifications. The quill used is $8^{3}/_{4}$" in length; stops vary from 0.215 to 0.580 per loom hour. The sizes and weights are arranged in tabular form for ease of reading and comparison:

During the meeting, awards were made to outstanding seniors of the School of Textile Technology, Alabama Polytechnic Institute. From left to right are: Ralph T. Davis, American Association of Textile Technology award; Paul L. Gregory, Textile Veterans Association honor award; James A. Crane, Jr., Alabama Textile Operating Executives award; Curtis Warren, father of Donald Warren who was given the National Association of Cotton Manufacturers student honor award (Donald is away on military service); Gary Nolan, Phi Psi Award; and Holmes Floyd, vice-president Opelika (Ala.) Mfg. Corp. Davis F. Smith, Chattahoochee Valley Phi Psi Alumni Award, was not present for photo.

Full Quill Diameter (")		
Small	Medium	Large
$1^{3}/_{8}$	1 7/16	$1^{1}/_{2}$

TABLE 1

Loom Supply Costs and Parts Life

Mill	Loom Model & Width	Loom Speed (ppm)	Fabric	Repair Supply Cost per 1000 Loom Hours ($)	Operating Life in Loom Hours		
					Shuttles	Pickers	Check Straps
A				13.96	2040	693	2515
B				10.95		1946	3000 (app.)
C	40″ X-2	192		9.00	1925	1400 (avg.)	4040 (avg.)
	40″ X	182		11.90			
	32″ X	172		8.96	1750		
	40″ E	175		6.51	2150		
E	"E"			9.60	1757	1016	3782
	60″ X-2				957	207	573
F					2428.60	2500	2737.27
G	40″ X-2	192		28.20	1000	566	3752
	40″ X	182		23.10	1675	776	4334
	36″ E	162		16.10	1750	1495	5141
I	22″ E	182		17.00 (avg.)	2800	720 (avg.)	1000 (avg.)
	40″ X-2	192			1800		
J	40″ X-2	192		21.80	1300	683	3540
	40″ X	192		19.82	1600	867	1700
K	32″ E	172	duck	7.30	2683		
	32″ X	172	″	8.30	1584		
	40″ E	163	″	11.30	1828		
	40″ P	150	″	11.30	2944		
	44″ E	160	drills & twills	11.30	2163		
	46″ X-2	180	duck	8.15	2830		
	54″ P	144	″	11.00	1863		
	60″ X-2	160	drills & sheetings	11.40	1138		
	64″ XP	145	enameling duck	13.70	1102		
	64″ XP	145	drapery, dobby	11.50	1102		
	66″ P	131	duck	16.90	2666		
	96″ O	100	duck & osnaburg	17.60	1210		
L	22″ XK	182	huck	24.26	2300	1200	1500
M	32″ & 42″ D 64″ D, 64″ XP, & 54″ XP 76″, 100″, & 120″ O			32.12	801	848	1310
					844	671	1396
					1049	579	784
N*	42″ X-2	180		17.00	2232	547	1488
O				17.07	1650	900	1350
P	40″ E	172		6.05	3000	1500	
	45″ X-2	192		9.10	2400	451	

*Cost figure excludes harnesses, heddles, reeds, and drop wires

Package weights (net, lb)			
	Small	Medium	Large
Spun	0.100	0.105	0.110
Quilled	0.100	0.130	0.150

Mill M uses a dogwood shuttle with double tunnel brass eye. The diameter of the full quill is 1 7/16″, quill length is 8¾″, net weight per quill is 0.119 lb (this plant lists a weight of 0.136 lb for singles filling), and filling stops per loom hour on the coarse filling are 0.25.

WHAT SLASHERS WILL DO—LEE

"Let us consider first the old stand-by, the big cylinder slasher. This type of slasher is the one most often seen, and it is probably turning out more pounds of yarn than all the others simply because there are still so many of them. . . However, there are very few new slashers of the big cylinder type, and fewer yet being made . . . the number . . . will continue to decline as more new slashers are installed.

"The three-cylinder slasher is found in several arrangements . . . most often encountered is the one

in which an additional 7′ diameter cylinder is placed almost directly above the low 5′ diameter cylinder.

"There are two reasons for this three-cylinder arrangement being found almost everywhere there are slashers . . . it was at one time the cheapest way of getting more production out of existing slashers . . . it quite often provided all the increased speed and production the mill needed for its requirements at that time. The three-cylinder arrangement provides at least 50% (and often more) increase in drying rate over that of a two-cylinder slasher. . . .

"The big cylinder slashers have several advantages . . . the mill personnel are familiar with the machine . . . the amount of stretch can be controlled and held to acceptably low limits at moderate speeds . . . steam consumption for the big cylinder type slasher is about the same as that for the small-cylinder or multi-cylinder type slasher.

"We have listed the advantages of the big cylinder slashers. Now we will point out their disadvantages:

"First, the big cylinder slasher is not generally considered applicable to filament synthetic yarns, while the small cylinder slasher is. We know that there are exceptions to this rule . . . also the big cylinder slasher is not usually considered applicable to worsted yarn . . . except for the latest slashers of the big cylinder type . . . the big cylinder type slashers use cylinders for 12 pounds per square inch steam pressure. This lower pressure limits their production capacity . . . the safety of most of the big cylinder slashers is also limited by these low pressure cylinders. . .

"Let us discuss the hot air slasher next. . .

"There is something to be said on both sides of the hot air slasher question, and I will try to give you both the advantages and disadvantages as we see them. . . First, the slasher room is cooler . . . all drying is done within the insulated enclosure . . . there are no rotating steam joints to be maintained . . . mechanical maintenance is limited primarily to a few fan bearings, guide roll bearings, and fan motors . . . capable of very high production. Mills have reported to us and we have observed production rates greater than 1200 pounds per hour and as high as 1500 pounds per hour . . . applicable to worsted yarns, as well as to cotton, spun synthetics, and blends of worsted and synthetic yarns.

Bob Lee of West Point Foundry & Machine Co. gave a comparison of big-cylinder, small-cylinder, and hot-air slashers, all of which are produced by his company.

"Now along with all of these . . . there are some disadvantages:

"First, we believe it is more difficult to control stretch on a hot air slasher than it is on either type of cylinder slasher. . . . All our tests indicate a higher consumption of steam. Both our new seven-cylinder and nine-cylinder slashers and the old big cylinder slashers use about 1½ lb of steam per pound of dry yarn, while the lowest steam consumption we have measured on a hot air slasher has been the 1.6 pounds on the experimental Air-Dri . . . and all the other hot air slashers on which we have made tests ran from 1¾ lb to 2½ lb and over . . . we are sure that there are tests which have given figures on both sides of these . . . actually, we can make the steam consumption rate of an Air-Dri slasher vary considerably by varying the amount of the exhaust.

"The highest drying rates (pounds per hour) are usually achieved by some sacrifice of steam efficiency. The most economical steam rates are recorded when the exhaust is decreased and the slasher operated at less than maximum capacity . . . there is a cleaning problem with the hot air slasher.

The screen and coils must be cleaned often and regularly to maintain high production rate. The worse the lint condition in the mill, the more often this cleaning must be done . . . the hot air takes more floor space, principally in width . . . the initial cost of the hot air slasher is higher than that of a seven or nine cylinder drying section. . . .

"There have been some hot air dryers that used gas to supply the heat. . . . We have stayed away from gas so far because the temperatures seem difficult to control . . . and warp is inflammable. . . .

"I seem to have mentioned most of the advantages of the multi-cylinder slasher while discussing the advantages of the big cylinder slashers and the disadvantages of the hot air slashers. . . . However, some of these should be repeated for the sake of clarity. . . .

"First . . . small cylinder slasher offers tension control superior to that which can be achieved on any other slasher. . . .

"Second . . . the warp is handled beautifully . . . being passed around curves of relatively large radius. . . The warp is not agitated by moving air current, and there is no history of rolling yarn. . . . Third, the . . . slasher is an extremely versatile unit. It is applicable as far as we know to every warp except worsteds. . . .

"Fourth, steam consumption of the small cylinder slasher is about 1½ pounds of steam per pound of dry yarn on the beam. . . . Fifth, we believe this . . . is the only slasher fully applicable today. . . .

" . . . let us say that we do not expect to see hot air slashers replace cylinder slashers, nor do we expect to see cylinder slashers eliminate hot air slashers from the industry. . . .

"We also think that there are many instances where several different types of slashers will do the job well. There may also be other types of slashers yet to come. We expect to see changes in slashers just as you do in other segments of the textile industry and in the whole American industry as it moves forward. We intend to progress along with you."

It paid Chatham to set up a preventive maintenance department to

Keep woolen cards running

by Clyde Hall

Assistant technical superintendent
Chatham Manufacturing Co.
Elkin, N. C.

Abstract*

THE NEED for a new maintenance program at Chatham Manufacturing Co. arose in the years following the war when business rapidly increased in complexity, bringing about increased numbers of yarns, more colors, and greater variety in the types of yarns. To meet the challenge of this increased complexity, which affected the card room as much as any other department, an attempt was made to specialize in certain areas of manufacturing.

Before the introduction of the preventive maintenance program at Chatham, about two years ago, the fixer system had been in effect. This, a fairly standard system in the industry, placed responsibility on a combination mechanic and carder who was assigned a certain number of machines. In addition to taking care of the mechanical condition of his cards, it was his responsibility to make the numerous settings and adjustments necessary to produce quality roving of correct weight.

As yarn variety gradually increased over the last few years and became the order of the day, the fixer's time was consumed largely on carding problems and the making of changes, with less and less time remaining for mechanical maintenance. As a result, mechanical failures began to increase and production became affected.

This condition pointed to the need for a system that would permit careful attention to carding as well as to the mechanical conditions of the carding machines.

Maintenance System. It was decided that a preventive maintenance department should be formed under different supervision and as a separate and distinct operation—this department to devote its entire efforts to the mechanical condition of production machinery. This would permit the fixers and others in the card room to devote their entire efforts to the production of quality roving. It was a first step toward specialization—mechanics to take care of mechanical machines, and carders to take care of the carding problems.

For such a system to be effective, it is necessary that everyone involved be in accord with such a procedure and fully understand its purpose. At Chatham, the cooperation and helpful suggestions from the men in the card room have been the biggest factors in making the program a success.

The basic philosophy of the preventive maintenance program is simply that "any production machine which is in perfect mechanical condition will do several things: It will increase production by decreasing downtime; it will reduce seconds and poor quality work by holding settings and adjustments longer; it will reduce waste; it will require less power; it will lower supply and repair costs."

In order to insure that the machines would be in first class mechanical condition, the preventive maintenance program was set up to perform four separate functions: (1) overhauling, (2) inspection and checking, (3) lubrication, (4) supply parts inventory.

Overhauling. The function of overhauling is carried out by a crew of qualified men, under a qualified leader, who take one machine at a time and completely disassemble and clean it. The basic machine frame is aligned and leveled, and is then rebuilt, with all worn parts replaced, making sure that each individual part is carefully inspected and adjusted.

In the beginning this caused a decrease in production; however, as more and more cards were overhauled, the decreased downtime more than offset the time lost by having one card shut down for overhaul. Besides actually gaining in production, these cards produce better quality and less waste. In the operation at Chatham there are enough cards to justify continual overhauling.

Inspection and Checking. Once a card has been overhauled and returned to production, it has been found that the fixer's job of setting and adjusting is made much easier and he can devote his time to the quality of the roving. It is, however, necessary from this time on that the card be kept in a high state of mechanical repair on a continuous basis.

With the information gathered during overhauling, it is fairly easy to discover which mechanical parts are most apt to give trouble, and an inspection sheet is made out to guide the mechanic whose job it is to check and make minor repairs. This is a never ending job of improvement; as experience is gained in this field, the check sheets are revised to incorporate items which may have been missed and to delete items which do not require as frequent inspections as anticipated.

Machine operators and fixers are questioned concerning any portion of an overhauled machine which is giving trouble. These items are checked and corrected.

Lubrication. No mechanical equipment will long remain in

*From a paper presented at a recent meeting of the Carder's Guild, National Association of Woolen and Worsted Overseers, at Worcester, Mass.

good condition unless properly lubricated. This function is a very important one to a preventive maintenance program.

Lubrication charts are made up for each type of equipment. Qualified men are assigned the job of lubrication, and their daily rounds are used to supplement those of the full time inspector. Our lubrication charts not only give the frequency, type, and amount of lubricant to be used, but also have a place for comments to be written by the oiler.

Information gathered during inspection and oiling is compiled to be used as an aid in overhauling in order that this operation may be continually improved. Items which the overhauling crew have missed, or which seem to cause undue trouble, are discussed with the head overhauler. On future machines these items are given particular attention, and some are redesigned in order to increase their life. Here we consult with machinery manufacturers, and their assistance in this field has been invaluable.

Supply Parts Inventory. In order for all the above to work efficiently, it is necessary to have a well controlled but adequate supply of machine parts. This, perhaps, is one phase of the program which can do as much as any other in helping efficiency. A ready supply of parts means that there is no delay or waiting by the overhauling crew or the inspector.

Our stock room is set up with inventory controls, and each part is kept in stock by using a stores control card index system which takes into account usage, delivery, and cost. Using such a system, we have actually been able to reduce our dollar value of parts and supplies by practically eliminating delay costs caused by not having the correct parts.

As more experience is gained, maximum and minimum quantities of items are adjusted and in most cases reduced, thus further reducing our dollar volume of supply parts.

Maintenance Costs. At the outset of the preventive maintenance program, there was an increase in the maintenance cost of the card room. This was to be expected, since the first few cards shut down for overhaul affected production and the extra labor of overhauling was also added expense. And during this period there was also an increase in the purchase of supply parts as the stock room was being set up.

However, after this original cost increase, maintenance cost steadily declined, production was improved because of fewer breakdowns, quality was likewise improved, and waste reduced. And perhaps the most notable improvement has been in the decreased usage of repair parts.

Once the initial financial burden is overcome, the preventive maintenance program will most certainly become a long range method of reducing cost. At Chatham this program is elaborate because of the size of the mill. And anyone attempting to incorporate such a program must adapt it to his particular needs.

While some very basic rules can be followed, the actual organization and methods used must be designed to fit each individual operation.

The preventive maintenance program at Chatham is being expanded, with few exceptions, to include all mechanical equipment in the mill. The basic philosophy and policy applied is similar in each department but the methods in some are different. Each department is studied and a program is devised that is most suitable.

Records. The preventive maintenance program requires a system of records keeping. It need not be an elaborate one but it is essential and no program can be complete without it.

The system at Chatham is designed primarily around a machine records file in which a very accurate case history of each individual machine is maintained. The items included are machinery specifications and dimensions, parts replaced, aprons, tapes and wire used, and any pertinent information concerning a particular machine. Only through careful analysis of records can trouble points be discovered and eliminated.

After two years, the program has more than paid its way. But as in all operations in modern industry it must be fluid and continual changes must be made as knowledge and experience are gained in an effort to improve and keep up to date.

Actual dollar cost as a measurement in evaluating maintenance effectiveness is a fallacy. As new and higher speed machinery is designed and built, it is inevitable that maintenance costs will rise. A better measure of maintenance is the cost per pound of quality product produced.

No management would turn down a 10% increase in maintenance cost if it could be proved that it would result in a 10% increase in production. Maintenance departments fail to sell themselves to top management on this basis. This problem facing maintenance men will continue to get worse unless they develop not only better methods of performing maintenance work but also better methods of selling their ideas to top management.

Question and answer period:

Q.—How often is it necessary to overhaul a three-cylinder woolen card running 120 hr/week?

A.—Much depends upon how well it was overhauled to begin with. Our program has only been in effect about two years but we feel that a general overhauling will be required approximately every two years.

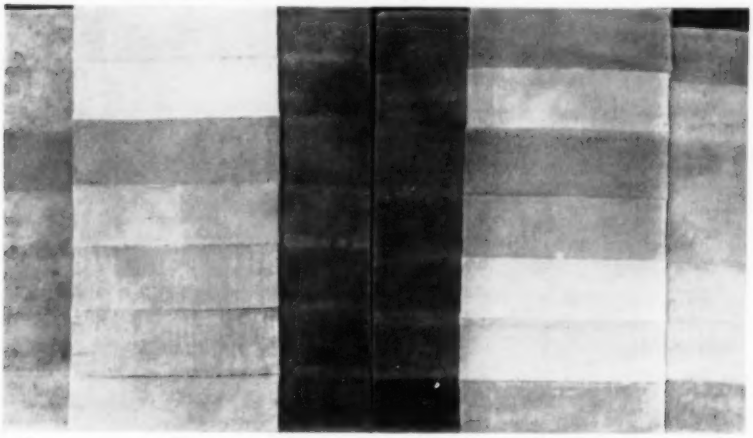
Q.—How long does it take to overhaul a card?

A.—Approximately two weeks. However, this overhauling will be gradually reduced as the overhauling program is now being broken down into separate functions, such as condensers, which will be overhauled as separate units.

Q.—How much attention should be given to lubrication and who should be responsible for it?

A.—At Chatham, we have a lubrication engineer, with qualified men under him, who is responsible for maintaining proper lubrication.

Effect of oil on the soiling of viscose rayon staple pile carpets of various colors. The samples in columns 1 and 6 were deoiled before being put on the floor; samples in columns 2 and 5 are the originals before soiling; and columns 3 and 4 are samples which were not deoiled before floor use. Samples in columns 1, 3, 4, and 6 were tested in use for identical periods under identical conditions. Note that samples which were not deoiled before testing have soiled at a much greater rate than deoiled samples.



1 2 3 4 5 6

Why do carpets soil?

Oily or greasy impurities in the pile are the chief causes

Here are some ways you can make carpets more soil-resistant

by P. Abbenheim
Exclusive

NO MATTER what type of yarn is used, all carpets soil; but the rate of soiling and the intensity of it will depend upon conditions of service and the routine of cleaning by brushing or vacuum cleaning.

It is important in considering carpets made with a viscose pile to separate short- and long-term soiling. The long term soiling is quite normal and may be expected in any carpet which undergoes normal wear-and-tear. The short term, however, is a completely different matter and it has been reported in Britain that this is almost entirely due to the presence of oily or greasy impurities in the pile.

It has been shown, however, that this soiling can be brought under control and that a viscose pile carpet can give complaint-free service as far as soiling is concerned.

The use of a proportion of smooth-surfaced fibers — such as the proteins (Fibrolane, Vicara, etc.) and a smooth cross section fiber, such as the type M.55 Fibro recently introduced in Britain by Courtaulds—in the pile of the carpet is advantageous in minimizing this long-term soiling.

It is stressed, however, that long term soiling of man-made fibers generally, in piles which are substantially free from oily and greasy impurities, is of a degree essentially similar to that encountered in carpets with all-wool piles.

Prevention of Soiling. Production of tufted carpeting which is not to show an undue rate of soiling depends upon a number of factors.

The main source of oil in a tufted carpet is from the backing, since jute spinning oils are often present in the backing cloth. It is essential, therefore, that a jute fabric with a low oil content be used in quality carpeting, and fabrics are now commercially available which guarantee an oil content of less than 1%. This, it is reported, is the best type of backing to use.

Latex filling, as used for backing tufted carpets, can be formulated in several ways and it is possible to cheapen the rubber mix by incorporating some mineral oil. It is felt that to use such a filler is unwise and such formulations should be rejected in favor of those which contain no mineral oils.

In spinning on certain systems it is quite usual to add a lubricant or oil to the stock before spinning. This remains in the spun yarn unless it is removed by scouring in a subsequent process. With tufted carpets, however, if the yarns used are made from spun-dyed or stock-dyed fibers there will probably be no subsequent wet processing. In such instances the oil can contribute appreciably to the rapid short-term soiling. It is, therefore, imperative to consider very carefully the quantity and nature of the spinning oil used in such processes as require lubricants (e.g., the woolen system).

Experience has also shown that it can be useful to utilize one or another of the proprietary anti-soiling agents according to the directions supplied by their respective manufacturers. These agents are particularly useful in combatting short-term soiling. They are also of some use in tackling the long-term soiling problem although, of course, this is not usually their main sphere of application.

Traditional woven carpets tend to be made—particularly in Britain and Europe—in dull shades, rather than in bright ones. Thus dirt accumulation on these carpets is not so obvious as on the newer and brighter tufteds. With tufted carpets made from viscose rayon staple it is possible to produce very attractive articles in both white

and bright pastel shades.

This is quite a reasonable proposition, but it should be remembered that such carpets will show the effects of soiling much more rapidly than those of a duller hue. It is, therefore, a sensible recommendation to advise the use of brightly colored carpets only when the intended end-use is really light duty and one in which the carpet will not be subject to heavy wear and tear or very heavy soiling from the continual passage of dirty feet across its pile.

Built-in flame resistance for cotton and rayon

■ A new way to make flame-resistant fabric, with a chemical firefighter built right into the fiber, was described at the American Chemical Society's 131st national meeting.

Unlike present fire-retardant textiles which rely on a chemical coating of the fiber to combat flames, the new materials are made permanently flame-resistant by changing the cellulose molecule without destroying the fabric properties, Robert F. Schwenker, Jr., told the ACS Division of Cellulose Chemistry.

The fire-fighting substances in the cellulose structure not only avoid hazardous flare-ups — they also snuff out afterglow, said the chemist, who is a research group leader at the Textile Research Institute, Princeton, N. J. Dr. Eugene Pacsu, professor of organic chemistry at Princeton University and research associate at the Textile Research Institute, worked with Mr. Schwenker on the project, which was sponsored by the Office of the Quartermaster General, Department of the Army.

The new technique produces "permanently flame and glow-resistant cellulosic fabrics . . . by chemically modifying the cellulose chain in such a way as to reduce flammable products" and by building into the molecule "certain elements that possess flame-extinguishing and glow-inhibiting properties," the speaker explained, adding:

"The modified fabrics produced by this means are found to have good 'hand.' Fabrics ranging from lightweight (3.6 ounces per square yard to fairly heavyweight (9 ounces per square yard) can be made flame and glow-resistant with equal facility. Only a small increase in fabric weight (10 to 12 per cent) occurs for even very lightweight and highly flammable fabrics such as brushed rayon and rayon challis. The mechanical properties of these new textile materials have not been fully evaluated, but preliminary testing has indicated that no appreciable losses occur in fabric strength."

The researchers produced flame and glow-resistant cloth by starting with standard textile material, Mr. Schwenker reported. He said they performed successful experiments with cotton fabrics ranging from 4.6 ounces to 9 ounces per square yard, viscose rayon of about 3.6 ounces per square yard, and cotton linters. All samples were given two laundering cycles, using both soap and detergent, before they received the flame test.

Flame-resistance is imparted to the cellulose by a series of chemical steps which result in the substitution of bromine or iodine for some of the oxygen-hydrogen fragments of the molecule, according to the scientist. He added that "excellent glow resistance" has been achieved by adding to the molecule certain substances containing phosphorus.

New England mills get young people but don't keep them, study shows

■ Perhaps the most significant conclusion which can be drawn from a Northern Textile Association study of labor turnover in New England cotton and synthetic textile mills, wrote the Association's Director of Research Leonard Arnold in a recent issue of the *Monthly Labor Review*,* is that the age levels of new employees and applicants for work tend to disprove the popular belief that younger people are not attracted to the mills.

In the 20 cotton and synthetic textile mills selected to be representative of New England industry's locality, product, and size of mill, 15,429 production and related workers were employed during the first half of 1953.

The study showed that although a majority of the work force (60 per cent) was 40 years of age or over, with an average age of 43, employees with less than a year's service had an average age of 33, and 48 per cent of them were under 30. In addition, 44 per cent of job applicants were also under 30 years of age.

"The extremely high proportion of persons quitting their jobs after less than one year of service, however, indicates that mill management must meet the challenge of retaining younger people," Mr. Arnold continued. "Moreover," he said, "the lack of adequate data on reasons for quits suggests that management has not been particularly concerned [about this]."

It was reported that although exit interviews were conducted by five mills employing 22 per cent of the workers, actual exit interviews were held with only 18 per cent of the total number of quits. The largest proportion of workers interviewed (42 per cent of the 448 interviewed) gave no reason for quitting. "This is an area which deserves more thought and consideration than it evidently has received," wrote Mr. Arnold.

*A monthly publication of the United States Department of Labor.

With this mill construction and maintenance tool, Bigelow-Sanford

Saved $1100 on sprinkler hanging

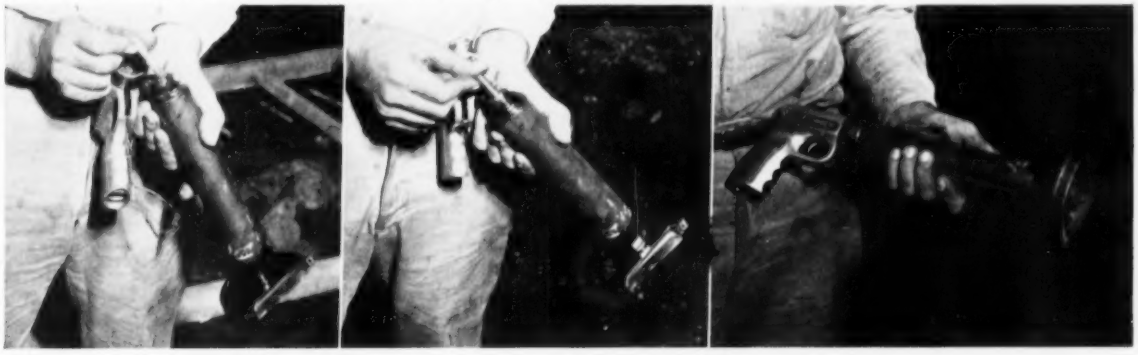
Staff prepared Exclusive

THE NEW Landrum Mills unit of Bigelow-Sanford Carpet Co., Landrum, S. C., not only embodies the latest in design concepts and features but also serves as a demonstration of the most modern construction methods.

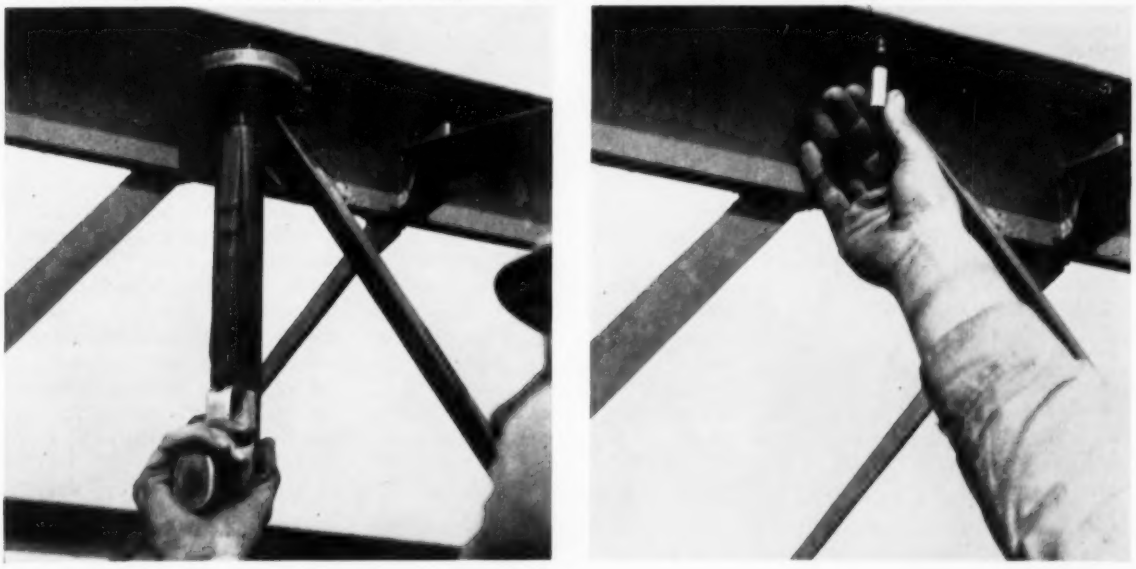
For example, the installation of studs for the suspension of the sprinkler system was simplified and accelerated by using a gun powder-actuated system of fastening which includes three integrated units—a tool, a powder charge, and a fastener. The system is keyed to modern steel and concrete construction and was developed to make fastening simple, fast, and economical.

In this instance, approximately $1125 was saved in applying 2800 fasteners and couplings for the sprinkler system alone. A gun was used to shoot 3/8" diameter studs into steel at a rate three times faster than the next best older

How the gun is loaded: The steel 3/8" dia. stud is placed in the barrel (left). Behind it is inserted the .38-caliber propelling charge (center). Once the breech is closed on the loaded gun, it is ready for firing (right).



To "shoot" the stud into a steel beam, operative places the flared muzzle against the beam (left) and pulls trigger. Hanger to receive the sprinkler-suspending sling is screwed onto the undamaged threads of the stud (right photo).



method. The savings were effected by speeding the operation and not by reducing the personnel required to do the job.

The studs are stronger and more durable than many fasteners because they are made of higher grade steel, with cadmium plating to prevent rust. The advantages of these fasteners become more obvious in instances in bar joist construction, where it would be impractical to put a clamp on the top member of a bar joist with the roof slab resting on it.

The only disadvantage noted involves selection of the right stud for the job at the outset. Once set, a stud cannot be moved or replaced. Therefore the fastener or stud must be put in the correct location initially. Also, the studs should not be used in steel less than ¼" thick.

Other applications showing similar savings include running electrical conduit, hanging lights, mounting switch boxes and outlets, suspending ducts, pipes, fans, and partitions. In short, "Ramset,"* as the method is called, is an integrated fastening system for setting threaded studs (or nail-like pins) into concrete or steel for attaching construction materials.

The gun requires no maintenance, and noncorrosive powder charges are used.

*Ramset Division, Olin Mathieson Chemical Corp., 12117 Berea Road, Cleveland 11, Ohio.

A new look at our economic system

■ A 64-page report issued recently tells how a group of 12 Americans attempted to answer the question: What can be done to correct the misconceptions about the American economic system that exist around the world?

The men assembled at Yale University last November 16-17 to take a new look at this old problem, and the booklet summarizes their analysis. The panel included business and labor leaders, Yale professors, and a magazine editor.

"The economic system of this country is poorly understood or positively misunderstood, not only by the enemies who wish to present America in an unfavorable light, but also by friends of this country and even by the American people themselves," states the introduction of the American Round Table.

"Because of the fantastic misconceptions that prevail and because of the importance of the war of ideas, it behooves us to re-think and clarify our mental image of the American economic system. . . ."

This re-thinking and the clarification is digested in the pamphlet published by the Advertising Council, co-sponsor with Yale of a new series of forums entitled, "The American Round Table: Discussions on People's Capitalism." "People's Capitalism" is the name by which the Council refers to this country's economic system. It has been described as an "appealing term which should aid us in the undertaking of a fresh and unstereotyped view of our system."

Here are some of the conclusions expressed in the booklet which may be purchased from the Council at 25 West 45th St., New York 36, N. Y.

1. Of all the great industrial nations, the one that clings most tenaciously to private capitalism (the United States) has come closest to the socialist goal of providing abundance for all in a classless society.

2. People's Capitalism has flourished because the people have a chance to vote with their dollars in the market place, thus deciding for themselves what is to be produced instead of taking what the government decides to provide for them.

3. The American economy has steadily approached the highest goals of People's Capitalism because (a) wide distribution of the policy-sharing processes in the economy either through the consumer making his choices in the free market or through distribution of control by distribution of ownership; (b) recognition among business and labor leaders that economic enterprise must be conducted with regard for the public good; (c) public demand for a rising, dynamic way of life; and (d) broad distribution of the benefits of the economy among the population.

4. American capitalism presents the picture of an extremely highly-developed technology at work upon an unparalleled wealth of natural resources. Resources become wealth only when a people have the organization and the skill to use them effectively. The American Indians had all the resources we have today but received little benefit from them.

5. Underlying the American economic system has been spiritual ideas that have been fostered since the birth of our country. These ideas stress the merit of economic endeavor, economic progress, and economic gain. Poverty has never been considered a virtue in this country. These spiritual ideas have contributed to a moral commitment of fair play and self-restraint, enabling the economy to control itself, in part, without being subjected to rigid or pervasive government controls.

6. The American ideal of equality of opportunity has fostered the growth of People's Capitalism by creating high goals for the population and thus stimulating their economic energies.

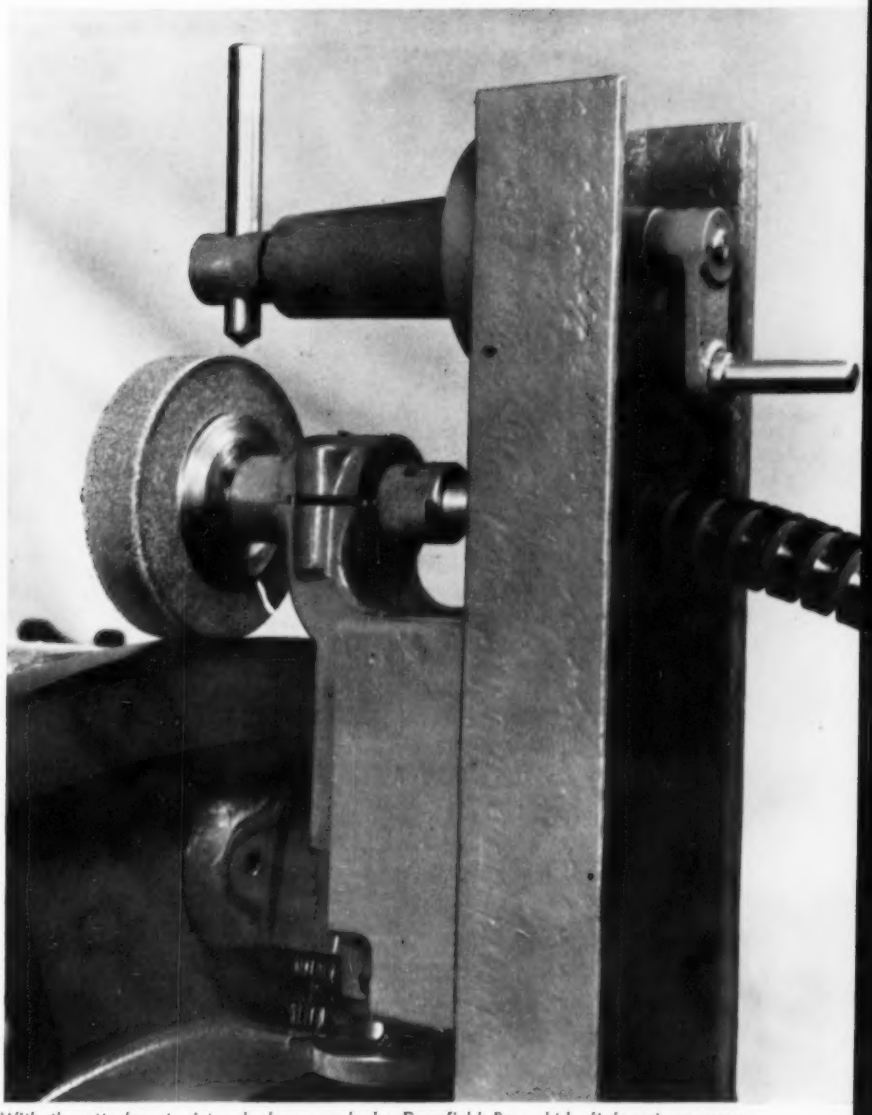
7. The ideal of a classless society, though never fully realized, has reinforced the ideal of equality of opportunity by creating the belief that no man is confined to a fixed status and that every man has the opportunity to forge ahead.

Here's what Georgia operating executives had to say about

GRINDING CARD FLEXIBLE BENDS

Other carding and spinning topics discussed:

Beater speeds
Nep determination
Lap waste
Anti-friction compounds
Mote knife angles
Traveling cleaners
Spun vs. quilled filling
High drafting systems
Top roll maintenance



With the attachment pictured above, made by Dronsfield Bros., Ltd., it is not necessary to remove the flexible bends from the cards in order to resurface them into arcs of a perfect circle.

Staff report

TO THE QUESTION, "What results are obtained in regrinding flexible bends?" eight of the 11 replying plants reported good results. The remaining plants have not been grinding the bends long enough to evaluate the results, or have had no experience.

Mill A: "Very good results. A more even setting on flats."

Mill F: "Our flexible bends were worn in ridges where the flats come onto them and where the flats left them. Thus it was very difficult, if not impossible, to get an accurate setting at these points. By regrinding these bends, we have a smooth surface to set to. We are getting better settings and maintain them better."

Mill H: "Better setting points which of course improves quality."

Mill I: "We find that regrinding flexible bends enables us to maintain better flat-to-cylinder settings."

Mill J: "Very good."

Mill M: "We are regrinding our flexible bends as we replace our flats. We have found definite improvement at all setting points. Since the bends also wear between the setting points it is reasonable to believe that a properly ground bend will keep the flats a uniform distance from the cylinder at all points."

Mill Z-1: "The best result we get from regrinding flexible bends

"Textile Industries" Poster Series

■ With this issue TEXTILE INDUSTRIES begins a new service for the textile mills. Opposite this page are the first two in a series of manufacturing hints and employee reminders in poster form, designed for placing on mill bulletin boards. Two different posters will be published each month, and all departments in spinning, weaving, and wet processing plants will be covered in turn.

Reprints of the posters are available for mills desiring an additional supply. Just drop a line to the editors and let us know how many you need, or use the handy reply card on page 173.

Let us know if there are any particular mill problems which you would like to see covered in this series of posters.

THE EDITORS

is more uniform setting of flats to cylinder over the entire circle of the bend: this results in less facing of the clothing on the flats and cylinders. Before regrinding flexible bends we had a serious condition of faced clothing and raised cylinder fillets. Since grinding our bends both of these conditions have very considerably improved. We do not say that regrinding bends is wholly responsible for this improved condition, but it is our opinion that it is the largest contributing factor in the improvement."

The discussion leader asked if any of the plants were regrinding their own bends. One plant representative replied:

"Our master mechanic built a jig for regrinding them in the shop."

Q. "What does it cost you to regrind a set of bends?"

A. "$2.80 to $3.00."

At this point another mill representative stated:

"It costs us $22.00 plus freight to get a set sent out and reground."

Still another representative volunteered:

"We get ours ground for $15.00 per set."

Q. "Will you describe the equipment used?"

A. "That is difficult to answer, for the master mechanic used parts from several sources."

A spokesman for another plant volunteered:

"We use a jig shaped like one-half of a wagon wheel. The bends are removed from the cards and held in an arc of a perfect circle on the jig. The grinder is passed around the bend while it is clamped in the jig."

Q. "What is done to the flats after the bends are reground?"

A. "We have the flats reclothed and milled."

Q. "How many bends, in proportion to your number of cards, do you regrind at one time?"

A. "One at a time."

Another plant representative stated:

"We grind eight sets at a time out of a total of 300 cards."

Q. "Are the cards kept out of production while the bends are being ground — are the bends interchangeable?"

A. "No trouble arises there. The bends are perfectly interchangeable."

Another spokesman volunteered the information that his plant ships the flats and the bends together — the bends to be reground, and the flats to be reclothed and milled.

Q. "Do you have any H & B cards, and are you able to regrind their bends?"

A. "We are regrinding our H & B bends also."

Nep Determination. In nep determination 16 of the 24 reporting mills make nep counts to determine the number of neps occurring in some unit area of the card web, with neps per 100 sq in. being the most popular system.

Two of the plants do not take nep readings.

The six remaining plants convert the neps per 100 sq in. of web into neps per unit weight of sliver. The formula for this conversion is:

$$\frac{14.40 \times \text{neps/100 sq in. web}}{\text{Weight of sliver in grains}} = \text{Neps per grain}$$

Several systems are used in isolating the part of the web over which the nep count is taken: *Mill A* uses a black board and a 10" x 5" glass cover. The cover is marked off in one-inch squares. Three readings are taken across the web.

Mill F uses a board covered with black velvet. Over this board is placed another board containing 30 round holes, each of which represents one square inch of area. The boards are long enough to span the entire width of the web. The readings thus taken are converted to 100 sq in. of web.

Mill H uses a black board and template, and counts 20 sq in. at a time.

Mill J uses a 9" x 4" board and converts the findings to 100 sq in. of web.

Mill L uses a black card 5" x 10". The doffer is stopped, the card placed under the web, and all visible neps are thus counted.

Mill M uses a 50-sq in. board, satin covered, and a Plexiglas cover marked off in one-inch squares. Three readings are taken: one at each selvage, and one in the middle of the web. The readings are taken at the 2½-hr point of a three-hour stripping cycle.

Mill U uses a board and template large enough to allow 20 sq in. of web to be counted at a time. Five such readings are taken, and the results are expressed in neps per grain of sliver.

Some of the plant representatives expressed agreement that the nep count in any one plant will show some variation if more than one person makes the count. Furthermore, the nep count will vary from time to time with only one person making the tests.

Lap Waste. What is the proper amount of lap waste to make in

(Continued on page 107)

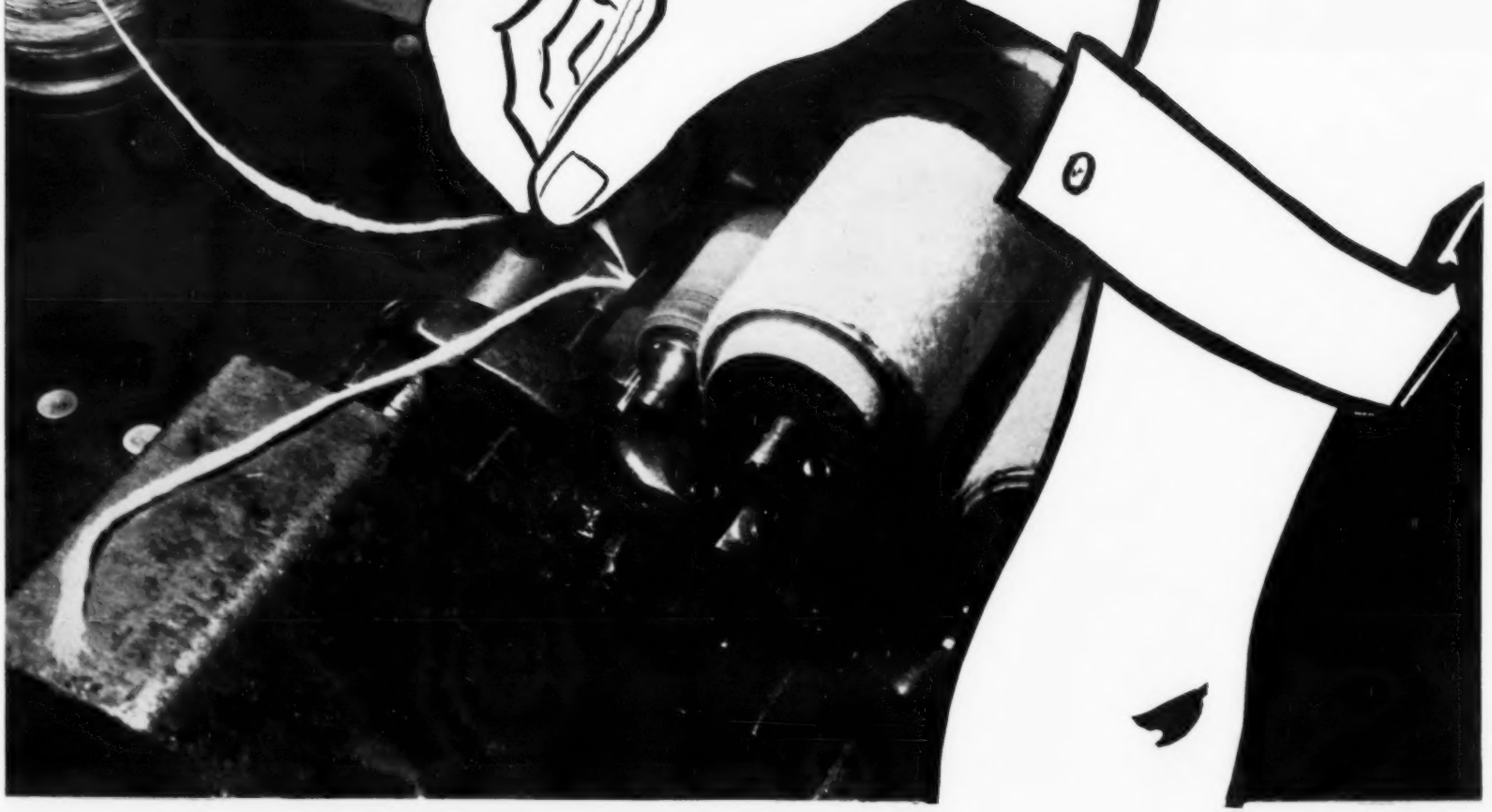
Clip on this line to post in mill

HOLD IT, SUSIE!
would you buy that much bad yarn?

Clip on this line to post in mill

HOLD IT, SUSIE!

would you buy that much bad yarn?



Textile Industries

1

TEXTILE INDUSTRIES POSTER SERVICE

"Textile Industries" Magazine
806 Peachtree St., N.E.
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PLEASE, CHARLIE!

use an apron or keep them in your box!

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2

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creeling laps? That is, what length of the "tail end" should be discarded and not allowed to run through to prevent damage to the cards? Or should this be based entirely on the work method so as not to allow any lap to run completely out?

There are as many methods in use as there are mills reporting. The factors affecting the local practices, however, fall into two main categories: the quality of the sliver to be produced, and the variation in run-out from the card to card. Sometimes this variation is produced by the card tenders themselves, sometimes by speed variations from card to card.

No plant reported that the lap is allowed to run completely out. The lumpy section near the end of the exhausted lap, that portion on which the picker start-up is made, is discarded. This portion ranges from 1/9 yard to a full yard.

Some plants discard the first half yard of the full lap to guard against sliver unevenness, and to permit the card tenders to "straighten up" the starting end of the lap. In at least one case, the entire first yard of the lap is thrown into waste. The average length discarded at the lap run-out is approximately ½ yard.

Mote Knives. In the table below is listed the angle the various plants find to give the best results. In several instances the plants noted that the setting changes with the stock being run and/or with the amount of waste to be removed.

Angle of Mote Knife Settings

Mill	Angle	Mill	Angle	Mill	Angle
A	15	I	30	T	30
B	18	J	16	U	20-30
C	15	L	18	V	30
D	15	M	18	W	16
F	25	O	12	X	15
G	25-30	Q	22	Y	15
H	14	S	10	Z	20
				Z-1	16-18

Note: Angle settings are in degrees.

Kirschner Beater Speeds. One of the questions asked of the plants was that of the Kirschner beater speeds being used. The speeds are listed in the accompanying table:

Kirschner Beater Speeds (rpm)

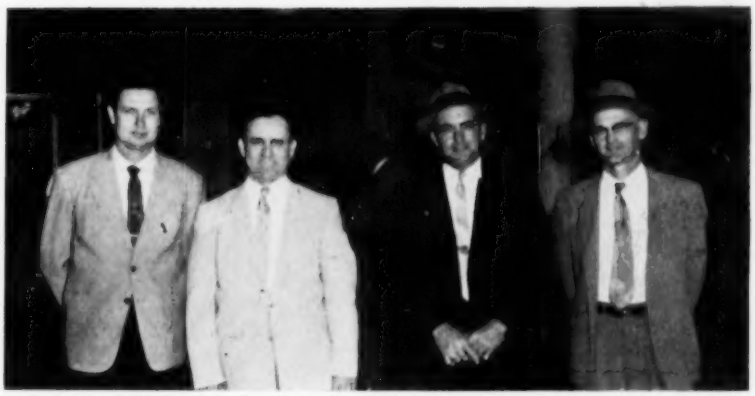
Mill	Front	Back
A	990	—
B	850	—
	950	—
	1225	—
C	1250	—
D	980	—
E	1000	—
F	1050	—
G	920	—
H	980	—
I	1075	1075
J	1039	—
K	1000	—
L	960	—
M	994	—
N	800	650
N-1	850-900	700
O	1150	1000
P	1025	—
Q	820	—
R	970	—
S	1035	—
T	960	—
U	1180	—
V	1270	1170*
W	1050	—
X	1200	800
Y	1238	—
Z	1175	1000
Z-1	790	—

*Middle beater speed: 1170

Anti-friction Compounds. Only two mills reported experience with anti-friction compounds on roving frames.

Mill T: "Our FS-2 Saco-Lowell 8″ x 4″ roving frames came equipped with an anti-friction compound. They have not given any trouble as yet and have been in operation for five years."

Mill Z-1: "We installed anti-friction compounds on 12 roving frames in 1939 and 1940. They have been satisfactory in every respect. We have not had to go into one in that length of time."



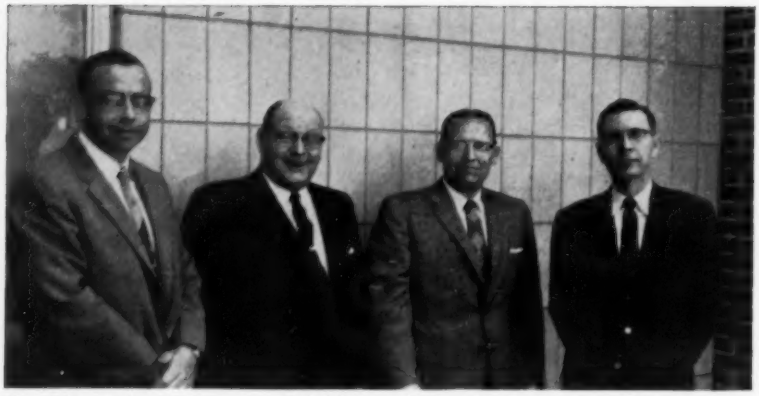
J. D. Peters, T. K. Franklin, Roy Criswell, and Buford Garrison, The Monroe (Ga.) Cotton Mills.

Dexie Mills and J. A. Bradshaw, Fulton Bag and Cotton Mills, Atlanta, Ga.

Spun vs. Quilled Filling. The plants were asked to report their experiences in going from spun to quilled filling, with particular emphasis on (a) gain in package weight, (b) improvement (if any) in slubs and gouts in the filling yarn, (c) justification of expenditure for the new system, and (d) any improvement in cloth quality and appearance.

The consensus among the nine plants reporting is that quilled filling contains from 15% to as much as 39% more yarn on the quill than that obtained with spun filling. The reduction in knots, slubs, gouts, etc., has permitted a drop in burling costs; and in general the improvements made in cloth appearance, reduction in labor costs, etc., justifies the expenditure for the system. The amortization rate depends largely on

Clyde C. Cobb of Riegel Textile Corp., Trion, Ga., led the spinning discussion.



Roy Clary, Ashworth Bros., Inc., Ted Wallace, Keever Starch Co., R. E. Davison, Linway Mfg. Co., Inc., Palmetto, Ga., and Cliff Hatch, Pepperell Mfg. Co., Lindale, Ga.

the local conditions.

Mill L: "(a) Quilled bobbin about 20% heavier. (b) Filling slubs in cloth reduced 50%. (c) The saving on doffing and battery filling was just about enough to off-set the cost of quilling, and the saving in burling cost would amortize the cost of quillers. (d) On goods with high quality requirements, quilled filling is a must."

Mill N: "(a) In changing from spun to quilled filling we increased weight of yarn on package by approximately 39%. (b) Our change was made principally to improve quality and we feel that we have practically eliminated slubs and gouts in filling by making this change. (c) Considering all items of expense we find that we have effected a slight saving by going from spun to quilled filling. (d) In our opinion, we have made a marked improvement in the quality and appearance of our cloth by making this change."

Traveling Cleaners. In changing spinning frame traveling cleaners to type with flexible cuffs for cleaning rails, floors, etc., how much hand cleaning and sweeping has been eliminated?

(a) Have you had trouble with travelers loading and wearing?

(b) Have gouts, slubs, etc., been reduced?

(c) Was relative humidity changed in room after flexible cuffs were added?

In a few cases the sweeping and creel cleaning activities were decreased; but the real reduction in cleaning took place in those instances involving hand cleaning. Here six of the nine reporting mills experienced a reduction in that type of cleaning.

Traveler wear caused by loading is not a problem. In six instances plants reported no change; in two instances, a decrease in traveler wear was noted; while in one case increased traveler wear was noticed.

Slubs and gouts in the yarn were decreased in four cases, increased in one instance, and showed no noticeable change in three cases.

Installation of the cleaning system encouraged no changes in relative humidity settings.

Mill D reported that thread boards and rails were cleaned once each eight hours previous to the installation. The cycle was changed to once each 24-hr period after the installation. This plant also noted that travelers were loaded more and wore out faster.

Mill M, in changing spinning frame traveling cleaners to the flexible-cuff type, did not eliminate any cleaning and sweeping, had no trouble with traveler loading and wearing, noticed no change in slubs or gouts (this had not been a problem at this plant), and did not change the relative humidity.

Mill N-1 uses the flexible-cuff type cleaner to clean rails, etc., but not to clean floors. The cleaners have eliminated the necessity of blowing off creels by hand, decreased the cycle of blowing off spindle bases by 67%, decreased the cycle of running out the sides 50%, decreased wiping backs by 67%, and decreased the cycle of wiping top and bottom of the creels more than 400%.

High drafting systems. In going to the newer high drafting systems, have you had to increase cleaning of rolls?

(a) Give roll cleaning and scrubbing schedule.

(b) Yarn counts, draft, and roll speeds.

(c) Has number of ends down increased?

(d) Have you added top roll weights? If so, how much?

Mill M finds that the newer system requires more roll cleaning. Top rolls are picked once each 24 hours on 31s and 26s warp; and once each 48 hours on 41s and 35s filling. Steel rolls are scrubbed each 5 months. On the old drafting system the top rolls were picked once each 48 hours on 31s and 26s warp and once each 72 hours on 41s and 35s filling. Steel rolls were scrubbed once each 10 months.

Draft on the 31s warp is approximately 25, and roll speed is 130 rpm. On 26s warp, the draft is approximately 21; and the roll speed is 149. On 35s filling, the draft is approximately 22; and roll speed is 142 rpm.

The number of ends down has not increased; and the total top roll weight has been changed from 40 lb to 72 lb.

Mill N has not had to increase cleaning since going to newer high drafting systems. Top rolls, pencil rolls, and revolving clearers are cleaned once each week. The steel rolls are cleaned once each six months.

Herman A. Dickert of Ga. Tech's A. French Textile School presided during election of officers for ensuing year.

Buffing Schedules for Top Rolls

Mill	Frequency	Yarn	Front Roll Speed	Draft
D	3 mos.	15s warp	180	27.72
H	3 mos. on front rolls; 9 mos on back rolls	14s 43s	208 110	27 (Avg.)
I	6 mos.	3.5 to 16s	190 to 118	5.6 to 13.33
L	6 mos.	30s	130	20
M	5 mos.	31s 41s	130 118	25 26
W	6 mos.	6.5s to 20s (cotton) 3.5s to 20 (rayon)	120 to 205	5 to 20

The yarns are all synthetics, and all are spun on 1⅜" front rolls. The yarns and the drafts under which they are spun are:

Yarn	Draft	Front Roll Speed
30	30	100
20	20	102
15	24	116

There has been no increase in ends down; neither has weight been added to the top rolls.

Top Roll Maintenance. Asked if added weight on top rolls requires roll buffing to be done more often, four plants answered "Yes." Two others qualified their answers to indicate "Yes." There was only one unqualified "No." The others of the 14 plants had no experience to report, or had drawn no conclusions.

Several of the roll buffing schedules are included in the accompanying table.

In checking uniformity of the synthetic-covered rolls, the plants use various devices such as placing the rolls on a straight edge and sighting between the roll and the edge, using a run-out gauge, buffing all new cots to the same diameter and keeping each frame's rolls separate, and buffing all rolls to a given diameter which is checked by a gauge.

There is limited experience among the plants with the "soft" cots for top rolls. One plant reported that lap-ups increased in hot weather with an accompanying increase in clearer waste. Another plant reports an increase in yarn evenness. The third experienced plant reported that no tests had been made on yarn evenness. All three plants, however, reported an increase in yarn breaking strength. *Mill N-1* also reported fewer ends down.

The first part of the carding and spinning discussion held by the Textile Operating Executives of Georgia on April 27 was reported in the June, 1957, issue of this magazine. The preceding article devoted to the remainder of the carding discussion and to the entire spinning discussion, completes the staff report of the spring meeting of that body.—The Editors.

Manufacturers' shipments of tufte d textile products

(All figures are in thousands)

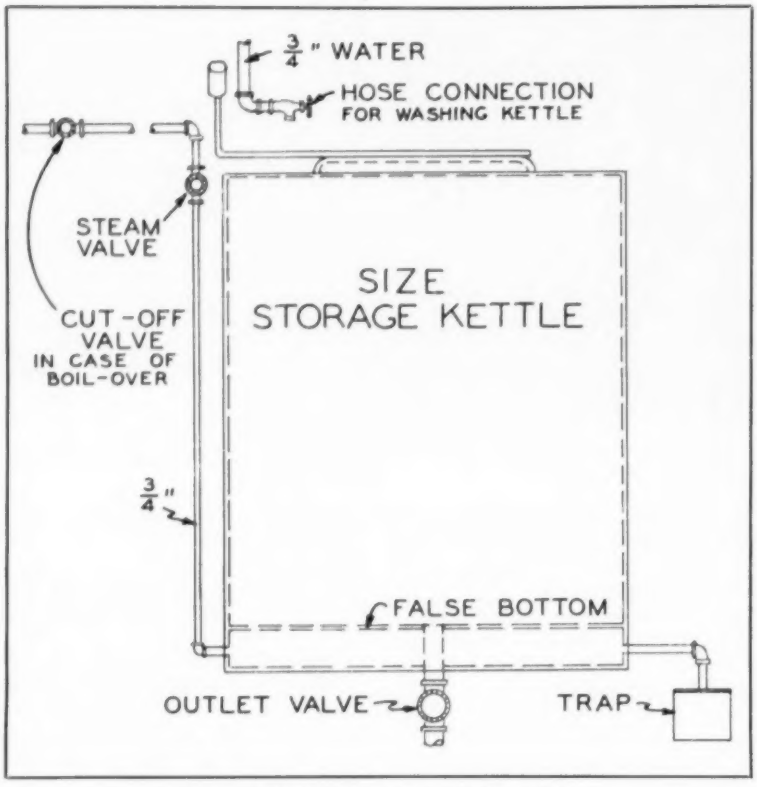
Product	Unit of measure	July 1-December 31, 1956		January 1-June 30, 1956		July 1-December 31, 1955	
		Quantity	Value f.o.b. plant	Quantity	Value f.o.b. plant	Quantity	Value f.o.b. plant
VALUE OF SHIPMENTS, TOTAL	—	—	163,697	—	133,383	—	153,636
Tufted rugs and carpeting, total	Sq yd	45,088	130,312	38,269	110,864	40,754	117,701
Scatter rugs, bathmats and sets (rugs 4 ft x 6 ft or smaller)	Sq yd	15,279	33,628	13,670	28,163	15,782	33,467
Rugs and carpeting, including roll goods (rugs larger than 4 ft x 6 ft)	Sq yd	29,809	96,684	24,599	82,701	24,972	84,234
Tufted robes	Number	2,132	5,549	374	955	2,426	6,242
Tufted bedspreads	Number	7,137	26,572	5,739	20,647	7,894	28,865
Other tufted products	—	—	1,264	—	917	—	828

Source: Bureau of the Census, Industry Division, Textile Branch.

WARP SIZING

Article 15—Discussion of storage kettles, size boxes, constant level controls, circulating systems, and types of slashers available*

By Paul V. Seydel, D.Sc.
Seydel-Woolley & Co.
Exclusive



Recommended design for a storage kettle.

Storage Kettles. The storage kettle should be large enough to hold the contents of one and a half cooking kettles. Since there is no advantage in vigorous boiling in this kettle, more of the total capacity is available for use. A 300-gallon storage kettle will be large enough if the full capacity of the cooking kettles is 200 gallons.

The agitation in this kettle should be sufficient only to keep a movement in the size, thereby keeping it uniform throughout and preventing formation of a crust on the surface. The movement should not be so fast as to break down the starch. 15 - 20 rpm is usually sufficient.

This kettle should be equipped with a closed coil to obviate the incorporation of water through condensed steam, thereby weakening the size. It must have a lid to prevent both contamination and evaporation loss. The storage kettle should not be vented, as this will allow undesirable evaporation from the stored size mix.

For storage kettles, an even better design is to use a false or jacketed bottom for steam heating instead of a coil. A kettle bottom used as heater has about the same heating area as two and a half turns of 1½" tubing, and thus has plenty of heat surface to maintain the temperatures needed in storage, particularly if the kettle is insulated. This type of heat has the great advantage that the heating surface does not become exposed until the kettle has been completely emptied, so that there can be no danger of baking the size on the heating surface and forming flakes of hard size. In addition, this type of kettle is much easier to clean, as there is no coil to interfere with cleaning.

Piping. All piping in the slasher room size system should be made of brass or some other rust-proof material. Brass is best, because starch or gelatin sizes will not readily adhere to brass. It is of prime importance in the design of a system to have a minimum amount of pipe from the kettles to the size boxes and as few right-angle bends as possible. When the size is standing in a pipe, it will cool off, and set to a gel, and the longer the pipe, the greater this tendency, as it will have more time to cool off during flow. Once set, it is hard to start flowing again, and may have to be blown out with steam pressure. Right angle bends in the pipe increase the difficulty in starting flow of a gelled size.

All pipes should be well pitched to drain thoroughly. The pipes should be of sufficient size so that they will not clog easily.

Usually a 2-inch pipe is preferable. The valves in the line should be of the gate-valve type to give a straight, clear opening. At suitable convenient places the size line should connect with the steam and water supply for the purpose of blowing them and washing them free from congealed size, dirt, etc.

The steam line should have a master valve at a distance from the kettles and the size boxes, so

*Continuation of discussion of the slasher room and its equipment, the first part of which appeared in the June issue. The first article of this series, which deals with all phases of the warp sizing operation for cotton yarns and yarns produced from man-made fibers, appeared in the May, 1956, issue of this magazine. Reprinting of the entire series in book form is planned.

that in case of emergency, such as boil-overs, the steam may be cut off without exposing the operators to danger of scalding.

The safety factor should also be considered when placing other valves and pipes, so that burns will not occur from accidental contact with the steam lines. The lines should be located where they will not be tripped over. Steam valves for the kettles should not be behind the kettles where they will be difficult to reach for frequent adjustment.

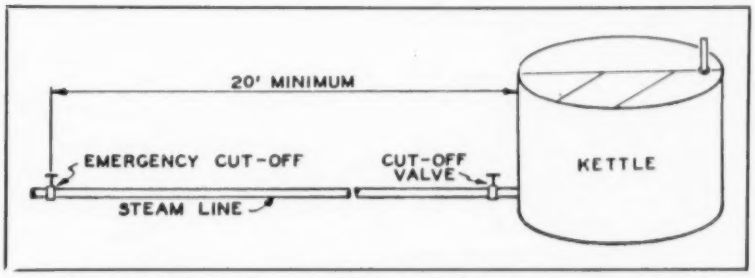
The Slasher Box. The slasher boxes should be lined with stainless or rust-proof metal, and should be equipped with an outlet to the sewer from the bottom so they can be completely drained. It is preferable to have the boxes of such shape that they follow the contour of the rollers with no sharp corners or dead areas.

They should be of no more than sufficient size to take care of the space required by the rollers and the coils, in order to obviate waste and a tendency to have different temperatures in different parts of the box, with stagnant corners, causing film and lumps to form.

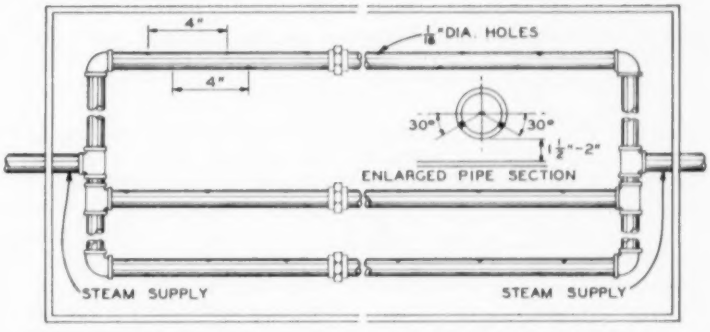
For starch sizes, and starch-based rayon gums, a size box with an open coil is used. It is very important that the open coil have uniform perforations and that the line feeding the coil be joined at the center or both ends to feed the steam uniformly in both directions.

One of the best types of coils for all around use is designed with three transverse pipes, one under each of the squeeze rolls and one under the immersion roll. These pipes are joined at both ends, and steam is fed into both ends, in order that both sides of the size box will be evenly heated. A line feeding in only one side will give uneven boiling in the box, causing the size on one side to splatter on the yarn, while that in the other side cools down.

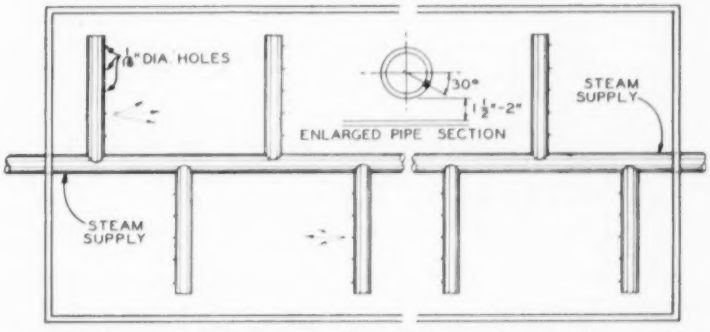
This is further aggravated by the fact that the holes will wear more rapidly at the end near the steam inlet, and as these holes grow, there will be even more tendency for uneven boiling. With the steam entering at both ends of the box, this also helps overcome radiation of heat from the sides of the size box.



For safety's sake, the steam line should have an extra cut-off valve at a distance from the kettle so that in case the size boils over, the steam may be cut off without endangering the operator.



Recommended construction of steam coil for size box. All pipes are standard one-inch, centered under the rolls and coming close to the ends of the box. Joints may be welded if preferred.

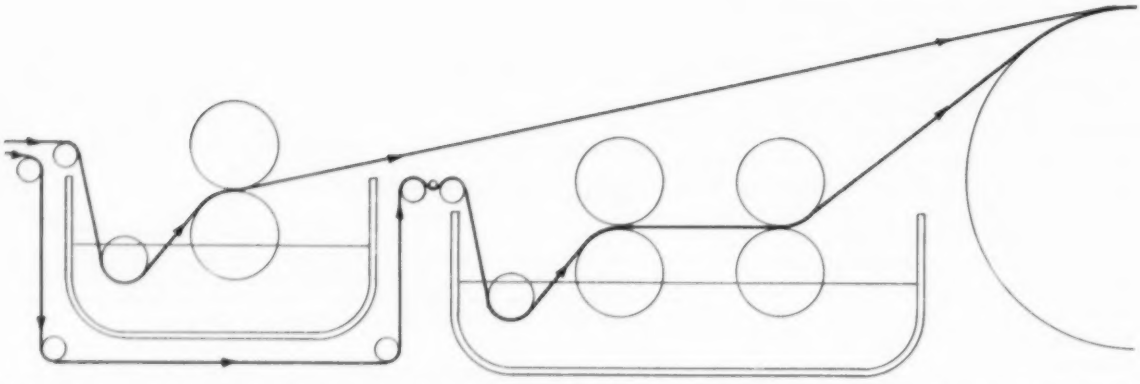


Branched coil. This design permits a swirling motion of the size and is said to improve agitation in this manner.

For mills that do not customarily run heavy sets, a two-pipe coil in the form of a thin letter "H" is often used, with the steam feeding into the center of the cross-bar. This type of coil is simpler, but generally the three-pipe coil is preferred.

A rather unusual type of coil has been used in several cases, the users claiming that the design of the coil assists in the agitation of the size. This coil has a single center feed pipe running across the size box, without holes, feeding short lengths of pipe which protrude from both sides of the center line. The short lengths are perforated in the standard manner, except that the holes on one side all point to the right and those on the other all point to the left. This gives an added circular stirring motion to the size; helping to prevent formation of scum or dead corners in which the starch may have an opportunity to gel.

The perforations should be on each side of the pipe, pointed down and staggered at an angle



In pattern work it is often necessary to use two size formulas for the different stripes in the warp. This is a typical set-up when running filament stripes in a spun warp. The filament stripes require only one pair of squeeze rolls.

of about 30° to 40° from the horizontal. Although in directing the steam toward the bottom of the box there is more of a tendency to stir up trash that has settled to the bottom, the advantages obtained far outweigh this disadvantage. Besides, if a filter is used as recommended over the inlet to the size box and if the box is cleaned out regularly, no trouble should be experienced from this source.

The steam coil should be set in the box at least one inch off the bottom, to prevent under wear from the steam jets.

A sketch on the preceding page shows a good type of construction for the steam coil for the size box.

A trap must be placed in the steam line near the box to avoid dilution of the size with condensed water.

Three new type size box assemblies — the Griffin, Cocker, and Shirley — will be discussed in a subsequent article.

If the slasher is to be used exclusively for filament yarns, its size box should not have an open coil. Live steam heating is neither necessary nor desirable for maintaining temperatures appreciably below 200 F, and most filament size formulations, being based on gelatin or polymers, are applied at temperatures between 140 and 160 F. Furthermore, it is not desirable to have the agitation given by violent bubbling, when running the filament yarns through the box. There should be just enough agitation in the size to keep it from scumming over in the corners, and for this, less agitation is needed than with the more viscous starch-based sizes.

A closed coil may be used, but a steam-jacketed box is preferable, principally for reasons of ease of maintaining cleanliness. In addition, a jacketed box can fit closer to the immersion roll and squeeze rolls, so that a smaller box with less excess size capacity may be used.

Most American slashers are equipped as standard with a single slasher box, having two pairs of squeeze rolls. For light sets, and for filament yarns, which use generally lighter size formulas, a slasher box with a single pair of squeeze rolls may be adequate. This has the advantages of lower initial cost, less upkeep, and a smaller size box which is always of advantage because it minimizes the amount of excess size needed.

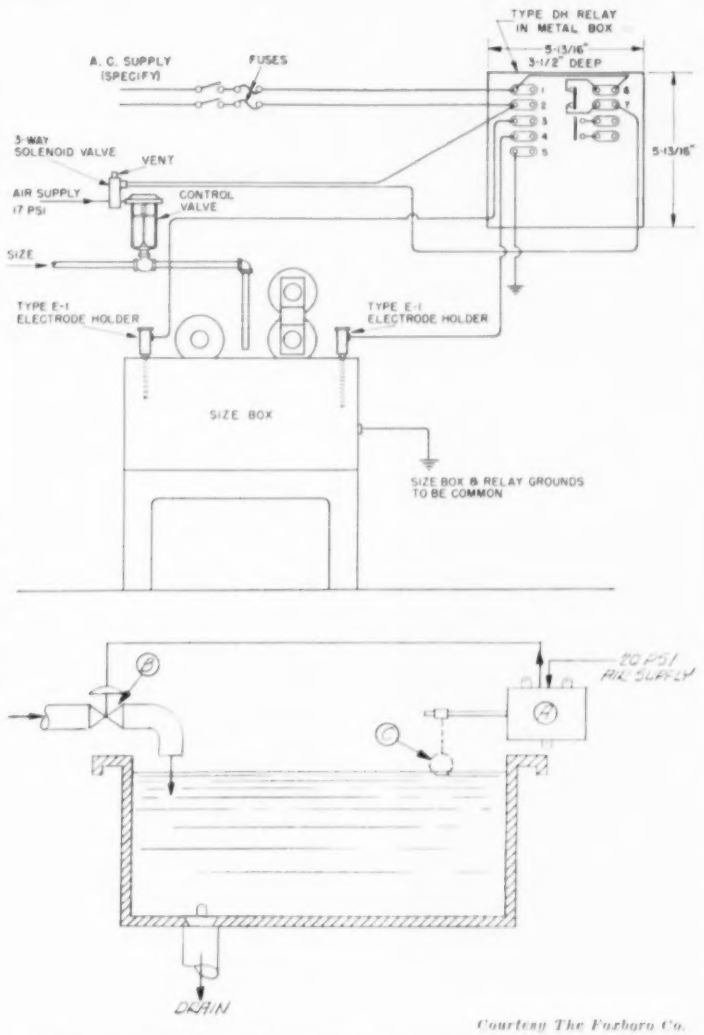
Fresh size is always preferable to old size, and the less there is in the box, the more rapidly it is replaced in proportion to its volume. Also, having a small volume of size minimizes the amount which needs to be discarded on shutting down for week-ends, or when changing formulas.

Mills running heavy sets and fancy patterns often find it advisable to use two size boxes on the slasher. For very heavy sets, much better results are obtained when the set is split in two parts, and one part is run through each box. This not only allows better access to the yarns for the size on application, but also allows for better dressing off of the yarns at the squeeze roll nips. Splitting the set in two in effect doubles the weight of roll carried by each yarn, and also better allows the blanket to surround the yarn at the nip and to dress off the excess size.

In the case of fancy patterns, it is often desirable to use different formulas on different yarns used, yet to be able to wind both on the same loom beam. This is particularly true if the mill is weaving patterns combining filament and spun yarns. In this case, two size boxes are a necessity. Two boxes are also helpful when weaving colored stripes, in order to prevent the shades of one color from being dulled by dye which bleeds from a darker color into the size box.

Two slasher boxes are also of value when it is desired to tint part of the yarn for identification, such as when running regular and reverse twist yarns, even though the size formula may be the same for both. In this case, the tinting color is added directly to the box, so that the same storage kettle mix may be utilized for both boxes.

Constant Level Controls. One of the most satisfactory controls on a slasher is the constant level control used on the size box, designed to keep the level of the size in the box at the same point. There are a number of constant level devices on the market, but the most desirable are those that keep a continuous small stream of size going into the box at all times, increasing the size of the stream when more size is needed and decreasing it conversely.



Courtesy The Foxboro Co.

Two types of liquid level controllers for the size box, which relieve the operator from manual attention to this detail. The top one operates by signal from the electrodes which through a solenoid open the valve by air to permit size flow. The bottom one is a simple float C and vertical connection which activates the transmitter A so that the pneumatic control valve B in the size line opens and closes to admit or stop size flow.

This is accomplished by use of a small by-pass line with a continuous flow rate less than that at which the size is used up. This is to be preferred rather than a control which operates intermittently, letting in a volume of size and cutting off completely, because a steady flow from the pipe into the size box induces a steady flow in the pipes, which tends to keep the size in them from congealing. These constant level devices are actuated according to different principles.

One, using a thermal control, operates electrically a diaphragm valve. An element is screwed in the side of the size box at the level at which it is desired to keep the size. As soon as this becomes uncovered, the air cools it, causing the mechanism of the valve to work. When covered, it is heated and closes the valve.

The float valve type works on an old principle. A float is connected by an arm to a quick-opening valve. When the size goes down, the float goes down, opening the valve and allowing more size to enter. As the size rises, the float rises and the quick-opening valve is closed.

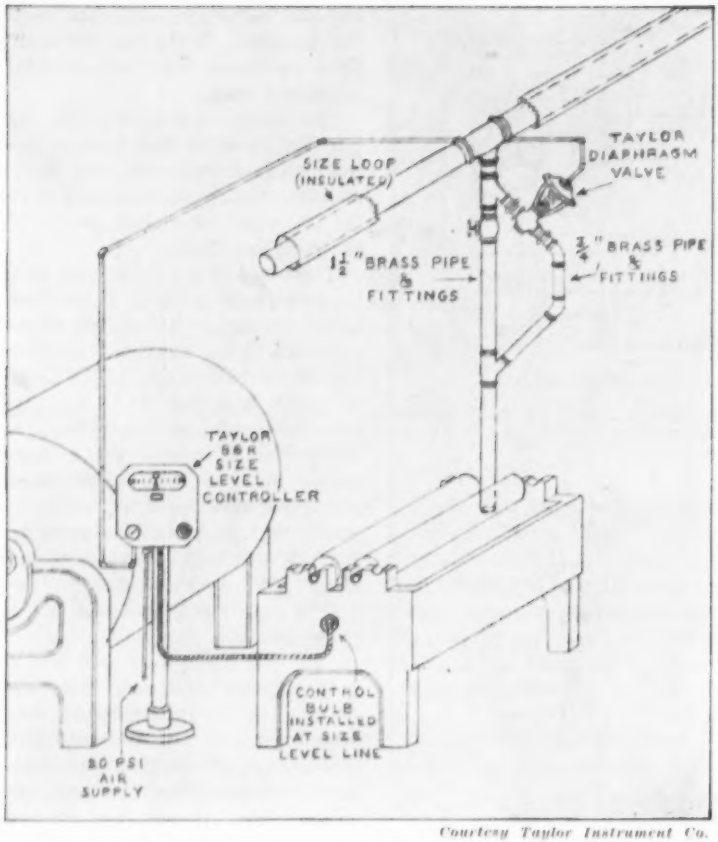
This float valve type is not susceptible to error due to excessive foam encountered with some water supplies, as is the thermal type. On the other hand, it is more difficult to keep clean.

There is also a type of size level control which operates on the basis of the electrical conductivity of the size mix. Two electrical contacts are set in the size box, at the levels at which it is desired to turn the size flow off and on. When the lower one is uncovered, a relay opens the size feed valve. Flow continues until the size touches the upper control, when a relay closes the valve. It is claimed that a constant level is held within one eighth inch. All three types are at present in use.

Circulating Systems. The old method in favor before the development of the constant level system was the circulating system. In this system the size was circulated from the kettle to the size box and through an overflow back to the kettle. By maintaining this overflow at the proper height, the level in the size box was constant at all times. Besides this advantage, it was claimed the size was kept uniform by mixing the size from the storage kettle with that of the size box.

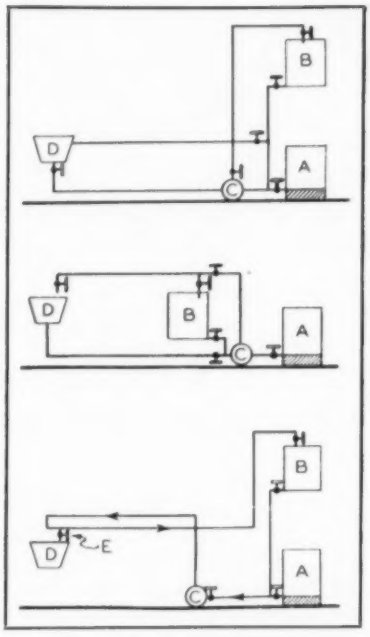
The reason that the constant level system is rapidly replacing the circulating system is due to the fact that size is broken down by the mechanical action of stirring and friction which in the case of the circulating system is very great. The size has to pass continuously through a pump, pipes, and a kettle, and is weakened due to mechanical breakdown. Where colored work is run in conjunction with white work, it is impossible to circulate the size without tinting the white yarn.

In designing circulating systems, it is of advantage to have outlets to the sewer at strategic points so that the entire system may be thoroughly drained when desired. Tees with steam connections should be placed at convenient and proper points to blow out the pipes so as


SIZE LOOP (INSULATED)
TAYLOR DIAPHRAGM VALVE
1½" BRASS PIPE & FITTINGS
¾" BRASS PIPE & FITTINGS
TAYLOR 86R SIZE LEVEL CONTROLLER
CONTROL BULB INSTALLED AT SIZE LEVEL LINE
20 PSI AIR SUPPLY

Courtesy Taylor Instrument Co.

Schematic diagram of pneumatic size level controls equipped with indicators. When the size level drops below the control bulb in the size box, an air valve opens in the indicating controller and the pointer shows a drop from the zero point. Air pressure is transmitted to the diaphragm control valve on the size feed line. This opens the size feed valve to refill the size box. In case of air supply failure, the diaphragm valve automatically closes.



Three typical circulating systems. (Top) shows the position of the mixing kettle A, and lines permitting of pumping the size into the storage kettle B through the pump C, which may also be used for circulating the size from the storage kettle into the size box D and back to the size storage kettle through the pump.

(Center sketch) The storage kettle is on the same floor or level as the make-up kettle. When the size is finished, the connection between the pump and the size box is cut off and the batch is pumped through the pump into the storage kettle by closing the proper valves. The same pump may be used to circulate from the storage tank into the size through and back to the storage kettle.

(Lower sketch) An installation where the size circulates in the piping to keep it from congealing there without including the size trough. There is one outlet located over the size box to permit the control of size feeding. The cut-off valve E is located close to the pipe where the size circulates to avoid clogging by congealed size.

to free them of congealed size in case the system becomes clogged.

It is also advantageous to be able to drain thoroughly the system to the sewer without having to run the size through the size box. This permits washing the system out even when the slasher is running; also it is unnecessary to run into the box materials that may be difficult to clean out of it. The whole system of pipes should be covered with asbestos as well as the size kettle and storage kettle, to minimize radiation and keep the size warm with the least possible consumption of steam. It must be remembered that excessive motion breaks up the starch too much, reducing useful viscosity.

The accompanying sketches show the positions of pipes, valves, and kettles in several types of circulating systems. They do not attempt to show steam lines and valves needed for blowing out the outlets to the sewer for cleaning up the systems. These should be put in convenient places, depending on circumstances.

Pumps. Size pumps should be of the low-speed rotary type. The less physical action on the size mixture, the better. The high-speed centrifugal pumps, or small high-speed gear pumps beat the size too much, breaking it down rapidly, and give a rapid decrease in viscosity.

Strainers. Every size system should be equipped with a suitable strainer at the size box to insure freedom from lumps of congealed size, strings, trash, etc., which get into the size mix with the different ingredients. This strainer should be easily accessible so that it can be removed and cleaned at intervals. It should also be of sufficient size to allow freedom from clogging and overflowing.

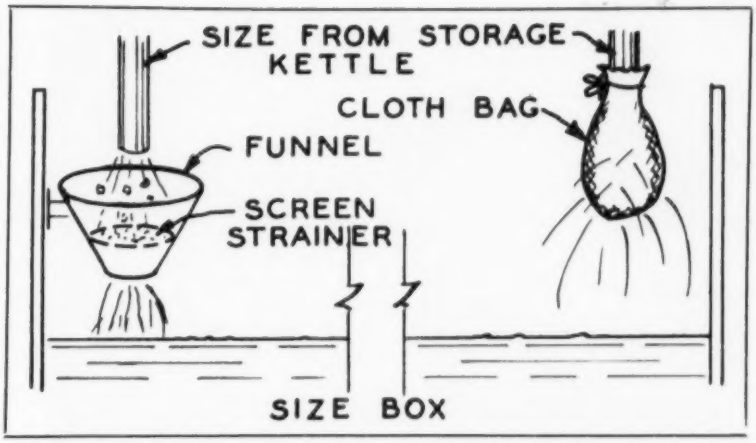
The lumps and trash should be caught before they get into the size box, because they are very difficult to remove from the size box due to the presence of the squeeze rolls, immersion rolls, etc. A very simple device can be made by inserting into a funnel a strain-

er made in the shape of a frying pan, the bottom consisting of fine mesh copper screen. This type of strainer can be easily removed and cleaned with a hose, or by immersing in a bucket of water which can be kept handy.

It is surprising to those who have never used strainers to see the quantity of foreign matter collected in them. Strings which would get through and fasten themselves on a sheet of yarn and cause tangled breakouts on the loom are eliminated; also small splinters of wood which might stick to the sheet of yarn and cut some threads. Lumps of hard and congealed size, which may or may not have become stained, are also taken out of the system.

Another effective type of strainer used by some mills is a sack made by sewing together the sides of a strip of cloth that has been doubled. This cloth is usually woven of coarse yarn about 20 or 30 mesh weave. The resulting sack should be about 4 or 5 inches in diameter and about 1 foot long.

It is tied with a string over the end of the feed pipe at the slasher box. About 6 or 8 inches of the sack should be left hanging, and it is preferable to place it in a funnel which leads to the size box. New strainers may be put on each morning, and the old one thrown away; oftener if necessary. The same type of strainer could be made of wire screen, and cleaned with a hose when necessary.

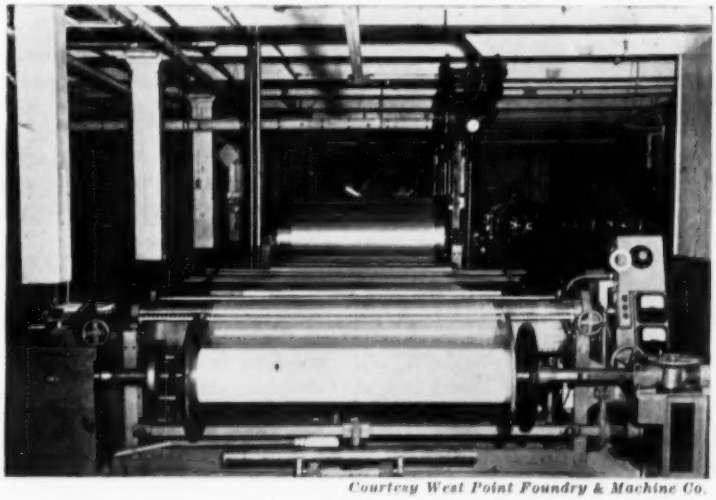


Two types of strainers that will prevent lumps and trash from the size kettle going into the size box.

Slashers. The design of all slashers in general use is essentially the same. The principal point of variance is in the drying section. Two types are generally used: the hot-air type, which is used quite extensively in Europe, and the cylinder slasher, popular here and in Latin America.

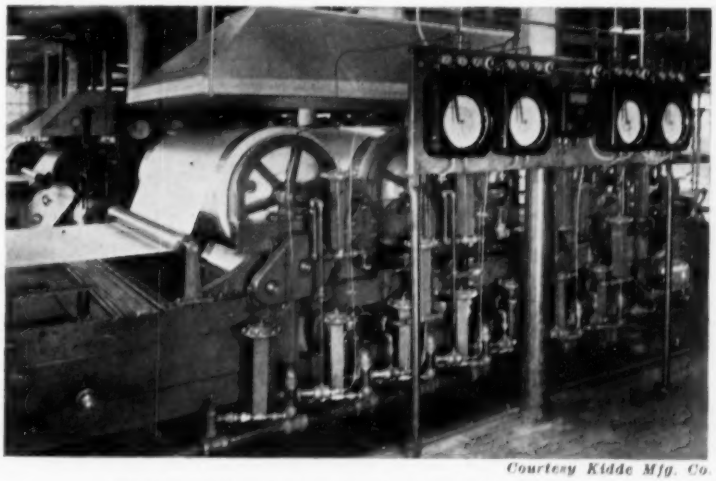
Each type has its advantages and disadvantages. There has been some experimentation with augmenting the usual type of drying with infrared radiation, supplied electrically or with gas burners. A proposal to dry the yarns by induction heating has not yet been tried on a large scale.

The cylinder type is easier to manipulate, can be operated with less difficulty for cutting laps or



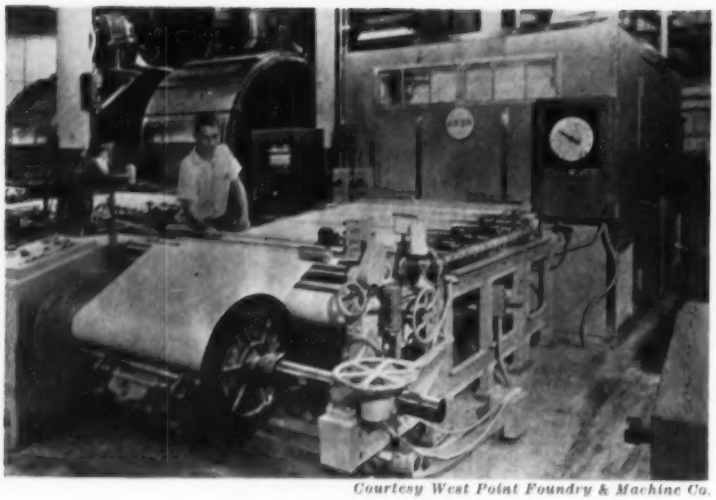
Courtesy West Point Foundry & Machine Co.

Front view of multi-cylinder slasher with multi-motor drive and double-bearing traversing tailstock.



Courtesy Kidde Mfg. Co.

Multi-cylinder slasher showing control instruments.



Courtesy West Point Foundry & Machine Co.

Hot air slasher.

cleaning, and has less waste than the hot-air slasher. On the other hand, the hot-air slasher is freer from sticking, and dries the yarns more uniformly — applying the heat on all sides at once. This gives less tendency to bake the size by overheating on one side, as is done with cylinder slashers.

It has been claimed that cylinder slashers give a "flat" yarn, but cross sections of yarn examined with the microscope in the author's laboratory have never shown any great tendency in this direction.

Among the cylinder slashers there are those with large cylinders, and those with smaller cylinders, called "multi-cylinder slashers," although strictly speaking, the large cylinder slashers are also multi-cylindered in that they have more than one cylinder. The large cylinders are five or seven feet in diameter, and the slasher may have from two to four. The small cylinders are two feet in diameter, and there are usually five, seven, or nine cylinders in the drying section.

Hot air slashers use heated air in an enclosed chamber for the drying process. It is claimed that a superior yarn is thus produced, through having been dried on all sides at once, rather than on one side at a time. This sounds reasonable, although the author has never seen any figures to prove the statement. The argument between the proponents of hot air and cylinder slashers has been going on for many years, and is quite likely to continue for many more.

Old-fashioned hot air slashers used to thread the yarns over a number of reels, with fans blowing in each. The more modern type leads the yarns through the drying chamber by means of a series of guide rolls, and it is claimed that the fewer rolls used, the better the results. One type of hot air slasher actually does the drying during only one pass through the chamber.

One drawback to the hot air slasher is its lack of heat efficiency. Cylinder slashers operate at about 65 - 70% efficiency, using 1½ pounds of steam per pound of yarn dried, while the hot air slashers generally require about twice this amount of steam.

Infrared heating of the sheet of yarn, either with a bank of electric lamps or a row of gas burners under the yarn, makes the most direct use of the heat which is produced. However, it is subject to danger from fires in case of breaking out of yarn ends that may fall over the heating elements.

Furthermore, a really efficient design has yet to be made, and the economy is nowhere near that of drying cylinders or hot air dryers.

Essentially, the slasher consists of a creel in which the section beams are held; a size box, where the yarn is coated with the sizing mixture; squeeze rolls for dressing the sized yarn; the drying apparatus; a system of lease rods for splitting the yarns that have been stuck together by the size; and a device for winding the yarns on a loom beam. It may include a number of various types of controls, which will be described later.

(To be continued in next issue)

New plan would link tariff to foreign wages

■ A foreign trade plan that would equalize foreign and domestic competition for American markets while at the same time raise wages and living standards for workers abroad was proposed in a forum on world economics in Washington on May 17.

The plant, to base U. S. import duties on the relative wages paid to production workers here and abroad, was presented by James M. Ashley of Toledo, Ohio, former national president of The Producers' Council.

Mr. Ashley represented industry in a panel discussion on "The New World of Economics."

"Let United States import duties be based upon a formula which industry by industry and product by product will offset the extra production cost of workers' wages, if any, between the domestic industry and the exporting manufacturer," said Mr. Ashley.

"This system does not ignore the relative productivity of labor. Nor does it require a foreign manufacturer to pay the same scale of wages as his American competitors in order to have his product admitted duty free. It does require him to pull his weight in the boat as far as the economy of his own country is concerned."

B.O.D. test

(from page 77)

test, because it is not likely that the waste will be treated after dilution or that the dilution of the waste in the treatment system will correspond to the dilutions given to the sample for B.O.D. test. Laboratory methods based on the determination of the oxygen demand of any waste, with or without dilution, are available for determination of the amenability of the waste to biological treatment making use of direct oxygen utilization methods (manometric or volumetric methods of determining oxygen utilization).

From the standpoint of the effect of a particular waste containing inhibiting substances on oxygen balance in the stream, the information obtained by the dilution method of B.O.D. determination is applicable if the dilution ratio in the stream corresponds to the dilution ratio used in the determination.

Wastes which do not contain any oxidizable organic matter but contain instead only inorganic substances, naturally cannot and should not be assayed by the B.O.D. method. Such purely inorganic wastes, if they contain toxic substances, even though they may not have a B.O.D. of their own, can affect the oxygen utilization in treatment processes or when discharged into a stream with oxidizable matter.

The influence of inhibiting agents should be removed if possible prior to the B.O.D. determination. Chlorine in the sample or the dilution water should be carefully dechlorinated. Neutralization or removal of many other toxic substances that may be present in wastes is not readily accomplished.

Two-Stage Biochemical Oxidation. Biochemical oxygen demand proceeds in two stages: (a) The oxidation of the organic matter to carbon dioxide and water, referred to as the first stage or carbonaceous oxygen demand; and (b) The oxidation of ammonia to nitrite and nitrate, referred to as second stage or nitrogenous oxygen demand. The second stage oxygen demand is as truly the result of biochemical reactions as is the first one, except for the difference in the types of materials oxidized. This difference, however, warrants differentiating between them.

In evaluating the quantity of oxidizable material in a waste, it is of primary interest to measure only the carbonaceous demand. From the standpoint of the effect of a waste on dissolved oxygen level of a stream, and its consequent effect on the survival of fish, it is necessary to include both types of oxygen demand.

If the evaluation of the effects of pollution on creation of nuisances in the stream is the primary objective, then oxygen demand of the nitrogenous material (NH_3) can be disregarded. Normally, the two stages do not exert their oxygen demand simultaneously. The nitrogenous demand succeeds the carbonaceous demand and usually does not begin to exert its influence during the first ten days of incubation (see graph on p.76). The five-day B.O.D., therefore, is primarily due to the carbonaceous demand. It should be emphasized that during five-day incubation the oxidation of carbonaceous material is not complete.

Biochemical Oxidation Rates. In the determination of the five-day B.O.D. of a waste without external interfering influences, such as unfavorable pH and differences in temperature, and without the inhibiting influence of toxic agents, the tacit assumption is made that the B.O.D. measures the amount of oxidizable organic matter, the rate of oxidation remaining constant. If this assumption is not correct, namely if the rate also changes, the B.O.D. cannot be taken as a true measure of the differences in the amount of oxidizable organic matter.

If at the end of the usual five-day incubation period or any other single incubation period that may be selected, different samples attain different stages of oxidation, namely different percentages of the oxidizable organic matter are oxidized, then there is no validity in using the B.O.D. as a measure of the amount of oxidizable matter. Under these conditions, it becomes necessary to determine the B.O.D. of the sample over a number of days of incubation and from the results calculate the rate of oxidation (rate constant k_1) and the ultimate oxygen demand or ultimate amount of carbonaceous oxidizable material (L).

Monomolecular formulation has been commonly used for the derivation of these values (k_1 and L) with a fair degree of approximation.

$$-\frac{dL}{dt} = KL$$

where $\frac{L_t}{L} = 10^{-kt}$

or $y = L\,(1-10^{-kt})$

where L = the ultimate carbonaceous oxygen demand or the ultimate amount of oxidizable organic matter, K = rate constant, and y = the oxygen demand exerted in time t.

The equation simply states that the rate of change in the oxygen demand is proportional to a constant proportion of the oxidizable organic matter remaining to be oxidized. If the rate were constant or were known, the B.O.D. measured would therefore be a true measure of the oxidizable organic matter remaining to be oxidized.

Until recently the same rate constant was assumed to apply to the oxidation of all domestic sewages and that this constant (k) had a value of 0.1 per day at 20 C, but studies have shown that the rate constant varies, (a) with the period of incubation over which observations and calculations are based, (b) with different sewages, and (c) with different fractions of the same sewage.

When observations and calculations are on the basis of a longer period of incubation (7-10 days), the k_1 values are found to be lower than those obtained over a shorter period of incubation. The velocity constant decreases constantly with increasing incubation periods and the velocity constant obtained over a period of time is an average of varying values over that period, and hence depending on the length of time selected, any velocity constant can be obtained.

Variations in the velocity constants over a definite period of incubation with different domestic

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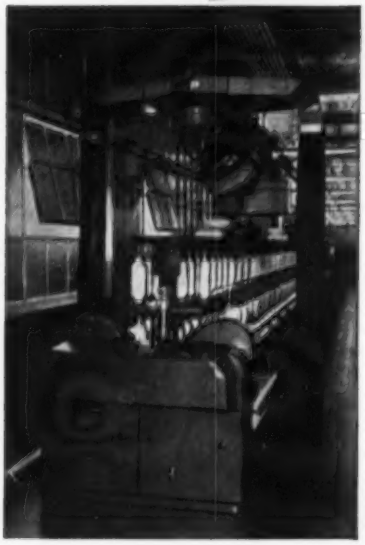

3

Underframe unit mounted on old cleaning system to complete cleaning operation.

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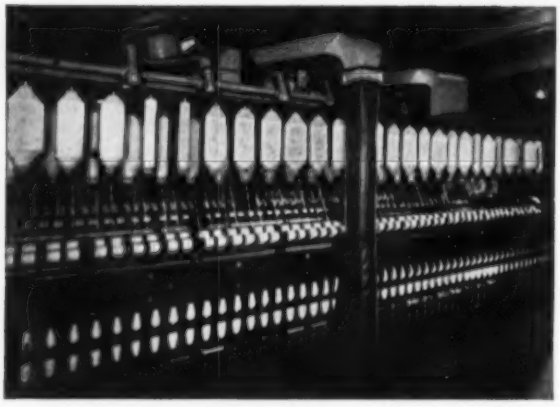

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sewages have been in the order of 0.04 - 0.29, and if a single k_1 value could be used, it would be nearer to the mean of 0.15 rather than 0.1 (5). Fractionations of sewage to different particle size have yielded velocity constants as follows, according to Balmat (6):

	Particle Size (Microns)	K_1
Raw sewage	—	0.22
Settleable solids	—	0.08
Supracolloidal solids	1 - 100	0.09
Colloidal solids	0.001 - 1	0.22
Soluble solids	molecular	0.39

It follows that the B.O.D. of the raw sewage can be affected by differences in the amount of various particle size fractions. It further follows that if a waste consisted of soluble and colloidal fractions it would have a higher k_1 value than if it contained only coarse or settleable solids. The rate of oxidation appears to be influenced by the degree of dispersion of the particle, or a function of the availability of the food. There is, therefore, no reason to expect different industrial wastes to be oxidized at the same rate under otherwise ideal or uninhibited conditions, or to be oxidized at the same rate as sewage.

Dilution has been found to have an effect on the velocity constant; with higher dilutions of sewage, higher B.O.D. values and lower velocity constants have been obtained. This has been attributed to the quicker onset of nitrification in the higher dilutions which superimpose upon the carbonaceous oxygen demand, the oxygen demand exerted by the conversion of ammonia to nitrite and nitrate (5).

The simultaneous oxidation of nitrogenous material with the carbonaceous results in k_1 values of a lower magnitude because the k_1 of nitrification stage is low. Some values obtained under these conditions result from two different reactions proceeding at two different rates; monomolecular formulation does not apply.

A similar problem is encountered when determining the B.O.D. of effluents from biological treatment units which are producing nitrified effluents. Here a great portion of the oxygen demand exerted during the five-day B.O.D. test is due to oxidation of ammonia to nitrite and nitrate. In comparing the B.O.D. of such an effluent with the five-day B.O.D. of the influent, in which the oxygen utilization is primarily due to oxidation of carbonaceous material, two dissimilar oxygen demand values are used to the disadvantage of the effluent quality, and resultant lower percentage purification values. Several methods of overcoming this difficulty by stopping nitrification in the B.O.D. test without interfering with the carbonaceous oxidation have been devised (7, 8, 9).

Whether it is better to exclude or to include oxygen demand due to nitrification along with the carbonaceous oxygen demand depends upon the purpose for which the B.O.D. is to be used. As indicated above in the case of proper evaluation of the performance of a biological treatment device, it would be preferable to exclude the oxygen demand due to nitrification.

In evaluating the pollutional effect of an effluent on the oxygen balance of the stream, the oxygen demand due to nitrification should be excluded if the objective is prevention of nuisance in the stream. This stems from the fact that the oxygen abstracted from the stream in the conversion of ammonia to nitrate is available to prevent odor production. Odors are not produced in the presence of nitrate. The dissolved oxygen used and converted to nitrate is not available for fish, so if maintenance of fish is the objective, then oxygen demand of the conversion of ammonia to nitrate should be included in evaluation of B.O.D. of a waste.

The Influence of Organic Matter and Dissolved Oxygen (D.O.) Concentrations on the B.O.D. These two variables are so intimately related to each other that they are best discussed together. In the dilution method of B.O.D. determination, the amount of organic matter introduced into the B.O.D. bottle is very severely limited by the low saturation value of oxygen in water. The volume of the sample introduced will vary inversely with the concentration of organic matter in the sample. The volume of the sample introduced should obviously not be so high that all the dissolved oxygen in the dilution water is exhausted at the end of the incubation period, and it should be high enough to bring about substantial amounts of oxygen utilization.

The concentration of organic matter introduced within this range, or indeed at any higher concentration, influences the rate of oxygen utilization, provided it does not completely exhaust the dissolved oxygen supply. Under these conditions, the concentration of the organic matter is not by itself a factor which influences the oxygen utilization rate. The quantity of oxygen utilized will increase proportionally to the amount of oxidizable organic matter.

During the incubation of the diluted sample, the D.O. is continuously decreasing from its initial concentration. Varying D.O. concentration from complete saturation with air down to some minimal value short of complete depletion has been shown not to be a factor in the oxygen utilization. There are indications that oxygen utilization rate is not affected by D.O. concentrations produced in water in equilibrium with pure oxygen (40-45 ppm D.O.)

It is more difficult to determine the absolute minimum below which D.O. concentrations become a factor in oxygen utilization rate. Theoretically, this should be at a trace of D.O. From a practical standpoint in respect to the B.O.D. determinations, the question to be resolved is: What is the minimum D.O. value after incubation from which reliable values can be obtained? Standard Methods specifies that dilutions showing 40 to 90 per cent depletion of the initial oxygen content are to be considered most reliable.

If the dilution water contained initially 9.0 ppm D.O., the above specification is tantamount to selection of those dilutions of the sample which after incubation give a utilization of 3.6 to 8.1 ppm of D.O. or a residual D.O. content in the dilutions after incubation of 6.4 to 0.9 ppm.

The reason for this specification is probably two-fold: High dilutions (a) give low oxygen utilization and the errors are multiplied with unnecessarily high dilution factors; and (b) result in nitrification within periods of less than

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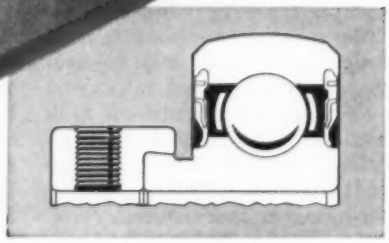

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five days, as was discussed.

The Use of Synthetic Dilution Water. The standard method specifies the use of a standard dilution water to be used in B.O.D. determination. The dilution water as used contains the following concentrations of minerals:

$FeCl_3$	.06 ppm
$CaCl_2$	30.00 ppm
$MgSO_4$	14.70 ppm
$KN_4HRO_4 \cdot KH_2PO_4$	47.50 ppm
$(NH_4)_2 SO_4$	1.87 ppm
Total	94.13 ppm

The composition of this water attempts to accomplish several objectives. It attempts to simulate the total salt content as well as the elemental composition of an average stream water, to introduce some salts in distilled water so that the physical environment (low osmotic pressure) would not cause a rupture of the cells of microorganisms, and to furnish a buffer system so that the pH value of the water would not be subject to drastic changes as a result of the acidity or alkalinity introduced by the sample or produced during the biochemical oxidation (the buffering is obtained by the rather high concentration of phosphate).

It also attempts to supply the nitrogen and phosphorus requirements of microorganisms. This is an important consideration when the waste or compound tested is deficient in these elements, such as in testing starch- or CMC-containing wastes. Microorganisms require these elements for cell synthesis and for biochemical oxidation; and if they are absent or deficient in the medium, oxidation of the organic matter will be arrested.

Generally wastes such as sewage contain and contribute nitrogen and phosphorus in sufficient quantity to the dilution water. To insure against possible deficiencies the standard dilution water containing these elements is recommended for general use. It has been found experimentally that a B.O.D.:N:P ratio of 100:5:1 is necessary. The maximum oxygen utilization that can be exerted in the diluted sample cannot exceed 8 ppm, which would require on the basis of this ratio 0.4 ppm of N and 0.08 ppm of P. The nitrogen equivalent of 1.87 ppm of $(NH_4)_2SO_4$ is equal to 0.43 ppm. The phosphorus content is far in excess of the requirement. Thus, even if the waste did not contribute any N or P there would be an ample supply in the dilution water.

The distilled water used should be as nearly saturated with oxygen as possible by storing it long enough to bring it to equilibrium with air or by bubbling air through it. In either case, the temperature of the water should be as near to 20 C as possible.

The use of tap water for dilution purposes is not recommended because of the possible presence of chlorine and the absence of necessary quantities of nitrogen and phosphorus. The use of river water is also not recommended because of the oxygen demand that may be present in the water itself and the fact that since such waters are not standard and uniform results obtained at different places are not comparable.

For the evaluation of the effect of discharge of wastes on the D.O. balance of a particular locality, the use of water obtained from the river for dilution of the waste for B.O.D. determination has many attractive features, but when used the source of water should be stated. Such a procedure simulates river conditions in respect to actual mineral composition, but river water often has an oxygen demand of its own. This difficulty can be overcome by taking the water from the unpolluted stretch of the river, or taking it some distance below the point of discharge of the waste and storing it until the oxygen demand is reduced to a minimum. The latter alternative is attractive, especially since it provides microorganisms which are adapted for the oxidation of the particular waste.

Methods for the Determination of Dissolved Oxygen. The B.O.D. determination by the dilution method is dependent on dissolved oxygen determination in the diluted sample before and after incubation and is, therefore, subject to the accuracy of the D.O. determination which is basically by the Winkler method. There are a number of substances commonly present in sewage and industrial wastes which interfere with the accuracy of the dissolved oxygen determination. Since certain modifications of the basic Winkler method are available to take care of the various types of interferences, for the chemist to select the proper modification it becomes necessary for him to know the type of interfering substances that may be present in a particular waste. When determining dissolved oxygen for B.O.D. test, the original sample is generally greatly diluted and the concentration of the possible interfering substances is thus greatly reduced.

The unmodified Winkler method and preferably the sodium azide modification is generally applicable to the B.O.D. determination of most wastes. The sodium azide modification effectively takes care of the interference from nitrite either present in the sample itself or produced during the incubation period for the B.O.D. test. The unmodified Winkler or the azide modification method can be used for B.O.D. determinations when ferrous iron is less than 0.5 ppm in the diluted sample.

The greatest difficulty arises with wastes containing sulfite, thiosulfate, polythionate, free chlorine, and hypochlorite. The alkaline hypochlorite modification of the Winkler method, recommended for wastes containing these interfering substances, is both cumbersome and subject to considerable error. The sulfides and hydrosulfides used and present in wastes from vat and sulfur dyeing processes, necessitate special precautions in the dissolved oxygen test in connection with the B.O.D. determination.

Some Important Precautions in Technique for B.O.D. Determinations. One of the important causes of errors is the use of improperly washed incubation bottles, for any trace of impurities, organic or inorganic, can have serious effects on the results obtained. The residual reagents remaining in the bottles from previous use should be thoroughly rinsed out. The best procedure is to completely drain the contents from the bottles, clean the bottles with a synthetic detergent, such as Naccanol, and rinse

thoroughly. Soap should be avoided because it is more difficult to remove completely and because it contributes a B.O.D. of its own.

The presence in the bottles of acids, alkalis, and other bactericidal agents, even in trace amounts, could inhibit the biochemical oxidation. The use of chromic acid as cleaning solution, as recommended by the Standard Methods, is therefore considered inadvisable.

Calculation of Results. When the dilution water has not been seeded for B.O.D. determination, the initial ppm dissolved oxygen content of the dilution water minus the ppm dissolved oxygen of the diluted sample after incubation divided by the decimal fraction of the sample used will give the B.O.D. of the sample in ppm. The correction in the calculations when the dilution water is seeded is given in the Standard Methods.

When a number of dilutions are made for a given sample, the results which fall within 40-90% depletion range are averaged.

The accuracy of the B.O.D. test falls within 5-10%.

Applications of the B.O.D. Test. The B.O.D. determination has the following applications:

(1) As a measure of the strength of waste.

(2) In the design of waste treatment plant as a measure of the type and capacities of units required.

(3) In the operation of treatment plant as a measure of load applied.

(4) In the operation of a treatment plant to evaluate the efficiency of treatment units and overall plant performance.

(5) To evaluate the load contributed by various manufacturing processes in the mill with the object of detection and prevention of excessive and unnecessary losses of waste.

(6) To evaluate the load contributed by various chemicals used in the mill.

(7) To evaluate the quality of the effluent discharged.

(8) To determine the degree of pollution of a stream.

(9) To predict the effect of pollution on the oxygen balance of the stream.

(10) To evaluate the self-purification of a stream.

The first two in TI's new series of posters for mill bulletin boards appear on pages 103-106. Reprints are available.

The textile mill chemist who has an interest in all these various applications can find in the paper by Masselli and Burford (10) some of the uses that the B.O.D. determination serves in a program of pollution reduction for the textile industry. The B.O.D. loads contributed by various departments and processes in textile mills are given per 1000 lb. of cloth. The results show that the major wastes in a cotton mill are desizing wastes (35 per cent of total mill B.O.D. or 53 lb. of B.O.D. per 1000 lb. of cloth), kiering and scouring wastes (32 per cent of total), and dye or printing wastes (20 to 35 per cent of the total). These indicate the processes that are the main contributors to the B.O.D. load from a mill.

By comparing the B.O.D. load from various processes in a mill with the corresponding values given by the authors it would be possible to determine also whether the B.O.D. contributed by the mill is above average or not and which process is responsible. Measures can be taken to reduce the losses and evaluate the efficacy of these corrective measures by further B.O.D. determinations.

In attempting to reduce pollution load by substituting new process chemicals with low B.O.D. values in place of the currently used chemicals, the B.O.D. is again a valuable tool. Carboxymethyl cellulose and hydroxymethyl cellulose with low reported B.O.D. values have been suggested in place of starch for sizing operations (11), (12). Other examples of substitution of chemicals for the purpose of reducing B.O.D. load include synthetic detergents for soap and sulfuric acid for acetic acid in dyeing.

Before any of these substitutions or additional modifications in the processing are introduced for the purpose of B.O.D. reduction, it has to be shown that the changes (a) are economically justified, (b) do not affect the quality of product, (c) do not create new problems of pollution, and (d) the B.O.D.'s of the chemical substitutes are real.

The last two items require some explanation. Important as B.O.D. is, it is not the only consideration from the standpoint of pollution. The new chemical substitute with a low B.O.D. possibly has some other undesirable properties such as causing frothing in treatment process or in the stream (as is the case with some of the detergents), and may have a toxic property on living organisms in the stream as well as on human beings. Its use would naturally be precluded under these conditions.

The influence of proper seeding with acclimatized seed for the detection of true B.O.D. values of certain synthetic organic compounds was discussed earlier in the article.

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Knitting Section

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Whether it be full fashion or plain interlock, fabrics made on Wildman Jacquard knitting machines are "distinctively different" in quality and appearance.

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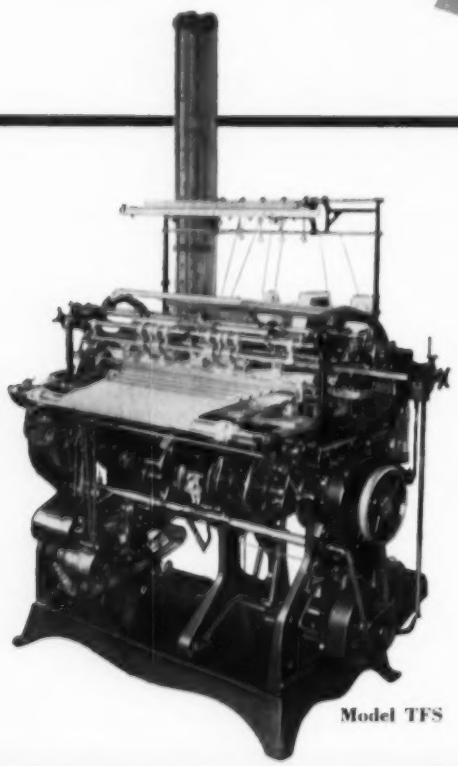
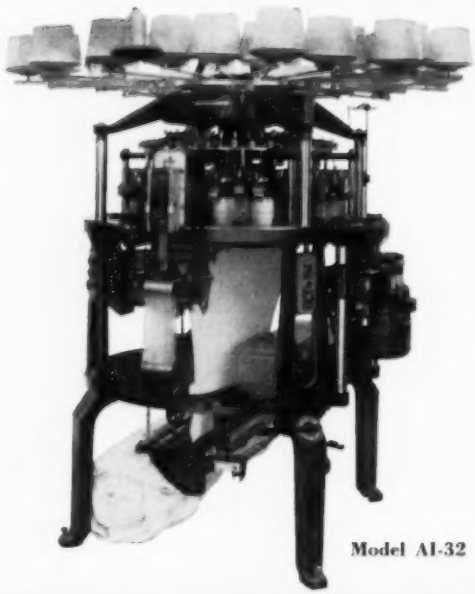
For knitting versatility, production, and quality — specify Wildman Jacquard Knitting Machinery.



Model TFS



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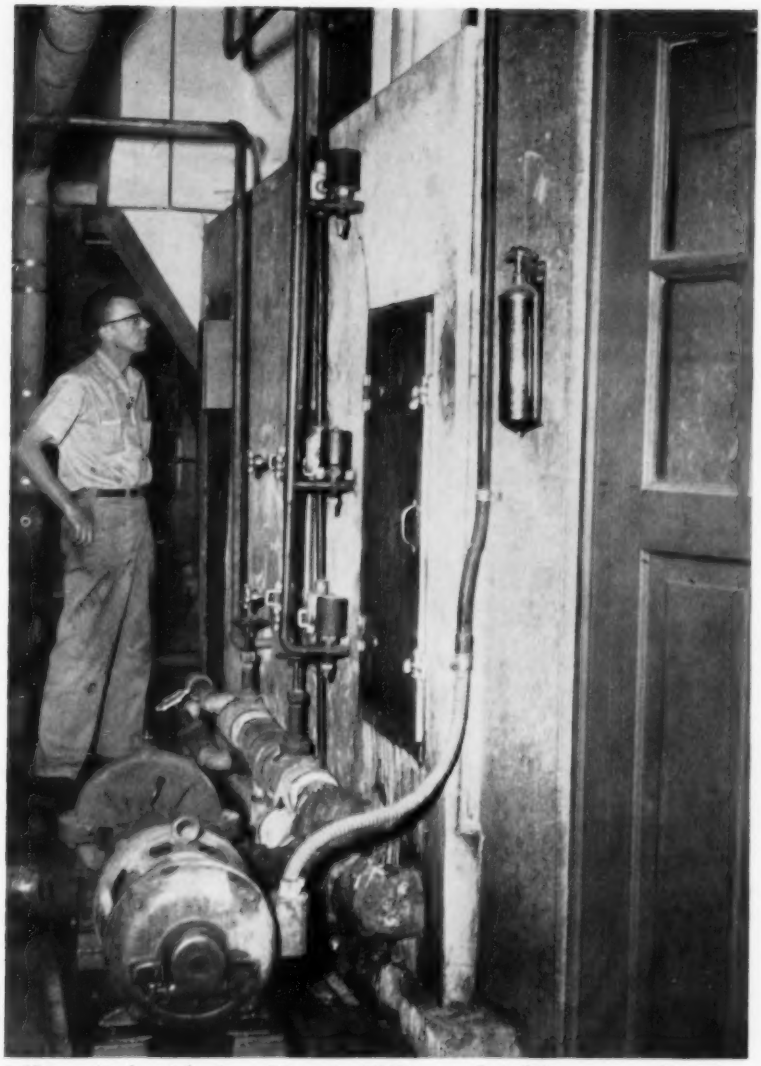

A 35-ton unit adequately air conditions about 7500 square feet of floor space in this modern mill. Shown here is the compact air wash enclosure.

Controlling air temperature and moisture content helps this mill

Keep F-F Seconds at 2%

Staff prepared

Exclusive

ACCORDING to one executive of a well-known North Carolina hosiery mill, air conditioning is becoming more important almost daily because of new product development in the hosiery industry.

With the development of finer deniers, stretch type hose, and more sheer hosiery styles, air conditioning becomes practically indispensable to successful mill operation—to protect machines and yarns from damaging temperature and humidity variations.

Furthermore, air control is effective in combatting maintenance problems with the intricate and fine-gauge precision-type knitting machines now required in the competitive market. Naturally, expansion and contraction must be kept to a minimum by carefully regulated temperatures.

Temperature fluctuations usually result in lack of uniformity in stocking lengths; and changes in humidity cause excessive friction or drag. This results in more tension which causes the yarn to run loosely. Should either temperature or humidity vary, quality always suffers.

The usual difficulties with temperature and humidity are held in check by air conditioning and humidifying equipment installed by Buensod-Stacey at this modern mill. A 35-ton unit adequately conditions about 7500 square feet of floor space. This mill runs 51 and 60 gauge full-fashioned machines 24 hours a day.

Savings in waste and maintenance on machinery permits amortizing the investment in the air conditioning and refrigeration equipment in about four years, according to estimates by the mill president.

Although seconds at the knitting machine are now held to two per

(Continued on page 129)

NAHM's new officers. Seated, l-r: Nathan M. Ayers, Triangle Hosiery Mills, chairman of the board; Charles W. McCrary, McCrary Hosiery Mills, treasurer. Standing, l-r: F. S. Eaves, Athens Hosiery Mills, vice-chairman; R. B. Crawford, Hanes Hosiery Mills, vice-chairman.

New board of directors of the National Association of Hosiery Manufacturers, standing, l-r: Paul Russell, Russell Hosiery Mill, Inc., Star, N. C.; Ralph M. Holt, Holt Hosiery Mills, Inc., Burlington, N. C.; John W. Bowman, Berkshire Knitting Mills, Reading, Pa.; A. D. Crenshaw, Magnet Mills, Inc., Clinton, Tenn.; and Edward Heathcote, Lynne Hosiery Mills, Inc., Mount Airy, N. C. Seated, l-r: Willis H. Slane, Jr., Slane Hosiery Mills, Inc., High Point, N. C.; Stanley M. Herlin, Ripon Knitting Works, Ripon, Wis.; and P. G. Menzies, Menzies Hosiery Mills, Inc., Hickory, N. C.

Hosiery Men Plan Promotion

Discussion of the "Better Hosiery Council Seal Program" highlighted NAHM's Atlantic City meeting

Staff report

DETAILS of the "Better Hosiery Council Seal Program" were high on the agenda of topics discussed at the annual meeting of the National Association of Hosiery Manufacturers at Atlantic City during the Knitting Arts Exhibition. It was emphasized that the seal is not a guarantee of equal value on all socks bearing the mark.

The seal is assurance of good value only and serves as a flag for consumer interest at sales counters and in advertising. Also, the seal program is the best means to raise funds to support advertising which no individual manufacturer can support alone. The program should help sell more socks by helping the salesmen, retailers, and manufacturers, according to J. Ellington of Ellington Co., who explained the program.

The "Better Hosiery Council Seal Program" calls for trade paper advertisements to appear in two colors and on a sustained basis for adequate promotion. Minimum standards are prescribed for those eligible to use the seal. The National Foot Health Council is to be active in supporting the program and to aid in its effectiveness.

W. F. Williamson, Reuben Ball, and Matt Kurtz of the National Association of Hosiery Manufacturers initiated organization of the program to promote better hosiery merchandising and industry standards.

Comments on textiles and advertising revealed that the percentage of sales spent on advertising puts textiles next to the bottom of the list, trailed only by nonferrous metals. Mr. Ellington stated that the industry has been trying to sell utility too much, which in turn does not promote sales. There is a basic lack of constructive promotion to sell more textile products, he said.

Thomas Robson, retiring chairman of the board of directors of NAHM, told the convention that the industry's greatest need at the moment is something close to a spiritual revival. "Chaos exists because we haven't the moral courage to ask and insist on getting what we know is a fair and reasonable return for our work and our investment," he said.

"The practice of selling some goods at a loss in order to sell, we hope, other goods at a profit has cost us dearly," he continued. "The industry can get a larger per capita sale for hosiery in all

Between 350 and 400 hosiery manufacturers and those representing allied interests were in attendance at the 52nd annual meeting of the National Association of Hosiery Manufacturers and the 20th Hosiery Industry Conference, held April 29 and 30 at the Claridge Hotel, Atlantic City, N. J., in conjunction with the 43rd Knitting Arts Exhibition. On the evening of the 29th the hosiery manufacturers met in Trimble Hall at the Claridge for the Association's annual banquet. Feature of the evening was the presentation of silver awards to retiring directors in recognition of their services. Those so honored were Thomas Robson, Wayne Knitting Mills, Fort Wayne, Ind.; Grayson Harralson, Princeton Hosiery Mills, Princeton, Ky.; Frank R. Riesenberger, Van Raalte Co., Inc., New York, N. Y.; and Edmund L. Lauber. Attendance at the Knitting Show, held in Atlantic City's Convention Hall, is estimated at 9,000.

classes, and with the number of mills in existence now there is enough business to provide a profit for all if each had the courage to get a profit on all the goods he sells. The industry knitted last year about exactly the number of dozens it was able to ship. Obviously, if the price had been lower than it was, more couldn't have been shipped; and if the price had been higher, no less would have been shipped.

"There is no reason except our own lack of enterprise and personal responsibility which kept us from capitalizing this situation," he continued.

"We have assets in this industry far overweighing our liabilities. We have sound and modern plants. We have, most of us, a sound financial structure. We are making a product of universal demand. We have a growing market. We have demonstrated in all branches an ability to improve and expand the market potential we have. This should be enough to guarantee a happy present and a happy future. Strong management policy can capitalize on our opportunities. We are the managers of the industry. Let's manage it to a profit," he concluded.

W. F. Williamson, president of the Association, told the group in his annual report that despite a smaller number of companies operating in the field and with productive capacity further reduced, there has remained enough anxiety for volume to keep the price structure soft. Actual capacity and demand are so closely in balance that a change in sentiment among the mills could change the picture very rapidly.

Senator Karl Mundt of South Dakota told the group to look forward to substantial reduction in the federal budget, and beginning in 1958 to look for reduction in the tax structure.

More responsibility must go along with expansion of the labor unions, he said. Present laws are inadequate to deal with the shortcomings of union operation. Management has yielded a lot by marrying unions to get rid of the problem.

Union members have lost control of union management as evidenced by 80 per cent of complaints coming from members of unions asking for freedom from enslavement. Freedom to join or not to join puts union leaders in a competitive situation in which they must serve and sell; therefore, voluntary unionism is desirable.

What to do about the situation in local and national government so management can work orderly with employees and so unions can serve employees may be answered as follows:

(1) Unions must be democratized, and members must have the right to vote by secret ballot.

(2) There must be a termination date for office holders, and selection of candidates and other processes must be put into the hands of the people.

(3) The unions need a bill of rights for the members.

These improvements should effect a more desirable industrial atmosphere in many respects, Senator Mundt concluded.

At a joint meeting of the men's, children's, and infants' division, Paul Russell and Willis H. Slane, Jr., presided, and a panel discussed problems in handling rubber yarns.

Rubber yarns need protection from (1) heat, (2) sunlight, (3) oils, and (4) ozone. Heat is usually found damaging in storage and in dyeing and boarding. Sunlight damage is encountered in both manufacturing and storage peri-

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Any time is the right time — for the kind of quality knit-wear you get with Arrow Latch Needles. Always smooth, strong, and free in latch movement, Arrow Latch Needles are made to Textile's standard of precision. Together with Arrow Flat Stock and Leaded Assemblies, they're backed by a half-century of service to the textile industry.

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ods. Oils get onto the yarns in production, thereby causing damage. Ozone from motors, fluorescent lights, and in the atmosphere in some localities is harmful to the rubber yarns.

Copper acts as a catalyst to speed damage in some dyeing operations, so copper-free dyestuffs are recommended. Certain bleaches have been found detrimental to the rubber. Rubber yarns should be stored and wrapped protectively if allowed to stand for a long time. Tension should be relieved as much as possible because ozone attacks more noticeably while the rubber is under tension than when it is relaxed.

Solvent emulsions (scouring agents) for removing oils are in some instances worse than the oil on rubber yarns. In answer to a question regarding the normal life expectancy, it was explained that this varies according to handling practices but should be about one year on an average basis. Deposits of detergents left from washes and rinses tend to accelerate deterioration of the rubber.

R. R. Rice, chairman of the women's hosiery division, presided during discussions on standards for women's stretch stockings, activities of Women's Hosiery Council, and presentation of promotion programs of the Du Pont Co., Chemstrand, Inc., and Patentex, Inc.

Ed Hegarty, sales training specialist, gave a presentation on "Training Your Salesmen." Mr. Hegarty based his training procedure on four steps: (1) Telling; (2) Showing; (3) Practice; (4) Correction.

G. Maynard Smith, labor attorney, told the group that unions sell management's mistakes and there is little excuse for the textile industry to be unionized. Union activities usually start from employee dissatisfaction and the union wins by default.

Four measures to combat union recruitment, as set forth by Mr. Smith, are: (1) Discharge all disgruntled and incompetent employees; (2) Discharge every man who plays favorites; (3) Tell the employees something about the business and how the business is progressing; (4) Have reasonable pay practices.

Employees should be informed that wage increases are to be considered at certain times, and individuals in the same classification should be paid the same rate of pay.

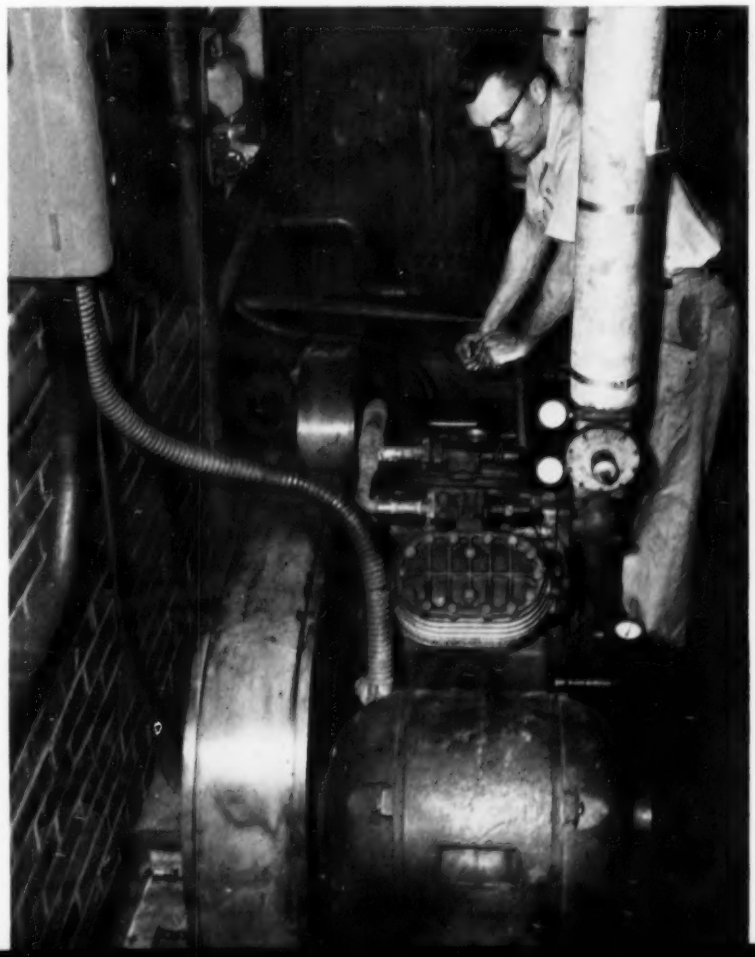
"Put your house in order before someone else does it for you. Get a good program, and sell it over and over to the employees. It makes no difference how good the program is unless it is sold to the employees repeatedly," Mr. Smith concluded.

Keep F-F Seconds at 2%

(from page 125)

cent, this figure would quickly rise to 5% without benefit of air conditioning, according to the spokesman. This mill operates at 56 per cent relative humidity at 80 F.

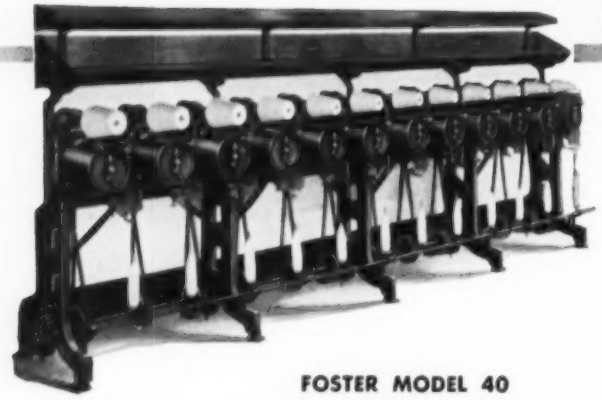
The air conditioning and refrigeration equipment in this mill has been in operation since 1948 with only nominal maintenance costs attributed to normal wear. The mill has always had a waiting list for employment, and this fact is at least partially attributed to the advantages of air conditioning in the mill, the mill spokesman concluded.



Air conditioning and refrigeration equipment has been in operation since 1948 in this well-known modern mill which was designed for it. The compressor equipment shown here is reliable and trouble-free.

HEAVY DUTY PRECISION WINDERS

FOSTER MODEL 77



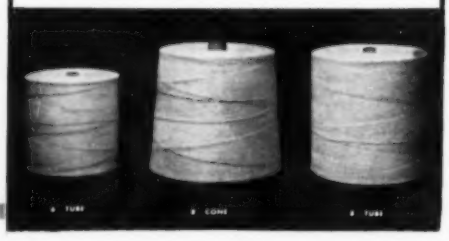
FOSTER MODEL 40

Champions at "Give and Take"

A champion in any endeavor, sporting or manufacturing, is made by superior ability in "give and take". The Foster Model 77 and Model 40 precise winders for cones and tubes are champions in this respect. They have proved, in tough competition, their ability to give high production and superior packages in the winding of coarse yarns and heavy plies. They are also known for their ability to "take it", requiring minimum mechanical maintenance and repair.

Check these champion characteristics of Foster Model 77 and Model 40:

1. Precise wind or lay.
2. Ball bearing spindles and drive shaft standard on Model 77, optional on Model 40.
3. Spindles driven by individual quarter-turn belts.
4. Equipment for drawing either over-end or unrolling.
5. Arbors for various types of cones and tubes furnished for both machines.
6. Traverses on Model 77 up to 8"—on Model 40 up to 6½".
7. Multiple end winding of braider tubes on Model 40.
8. Model 77 winds a range of counts from 8/3 to 8/100; Model 40 from 30/2 to 8/40.



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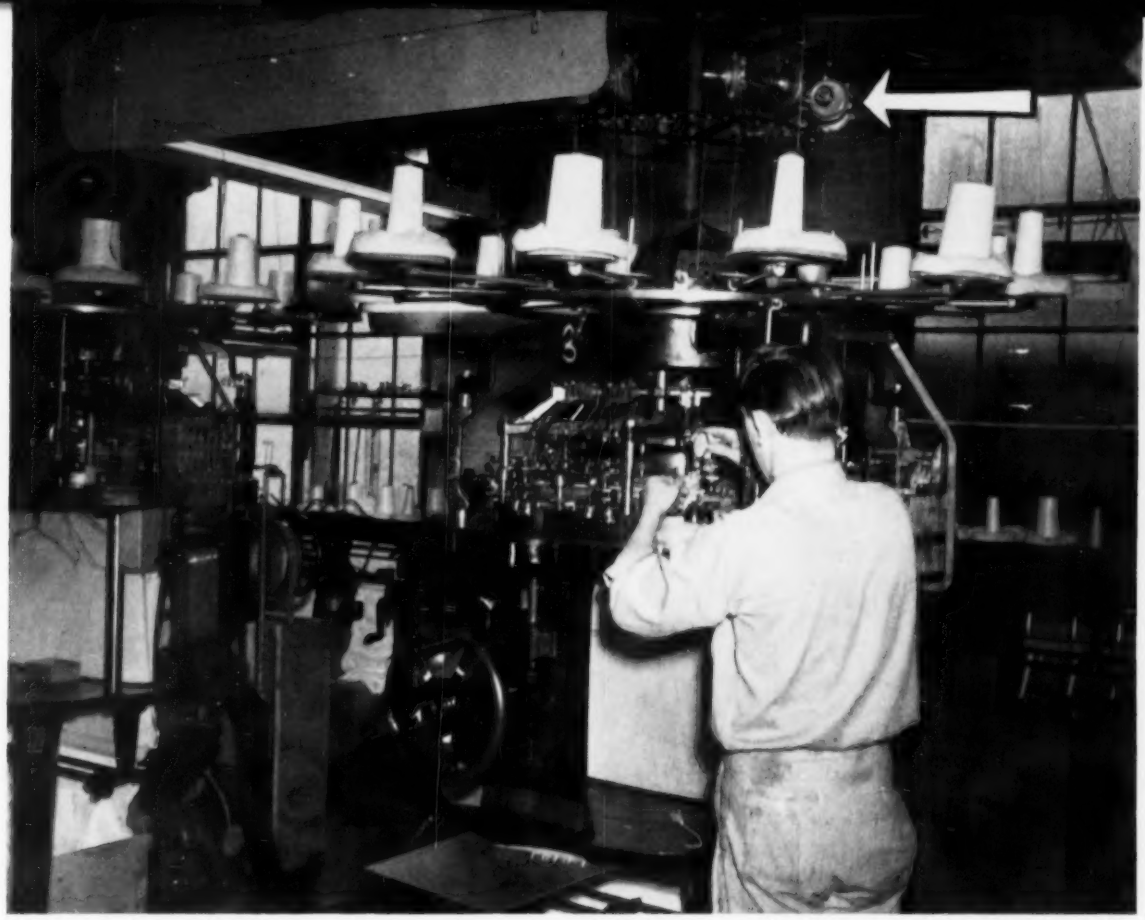
Southern Office: Johnston Building, Charlotte, N. C.

Canadian Representative—Ross Whitehead & Co., Ltd., 1475 Mountain St. Montreal, Que. and 100 Dixie Plaza, Port Credit, Ont.
European Representative: Muschamp Textile Machinery Ltd., Keb Lane—Bardsley, Oldham, England.



The knitter is shown as he makes a periodic test on the yarn tension with an instrument. These tests are necessary to maintain the required 20 grams of tension on the 2-ply, 200-denier, 68-filament yarn. Arrow points to a tension compensator device.

How Garden State Handles Helanca SW

Staff Prepared Exclusive

GARDEN State Knitting Mills, Inc., of Newark, N. J., sweater manufacturers since 1919, were the first to adapt the Helanca* yarn Type SW, a false twist, modified filament nylon yarn, to the manufacture of sweaters.

Sweaters of this yarn possess characteristics and appearance unique in the popular-priced, larger volume market. However, such is the versatile nature of the yarn that it lends itself to high-priced sweater styling as well.

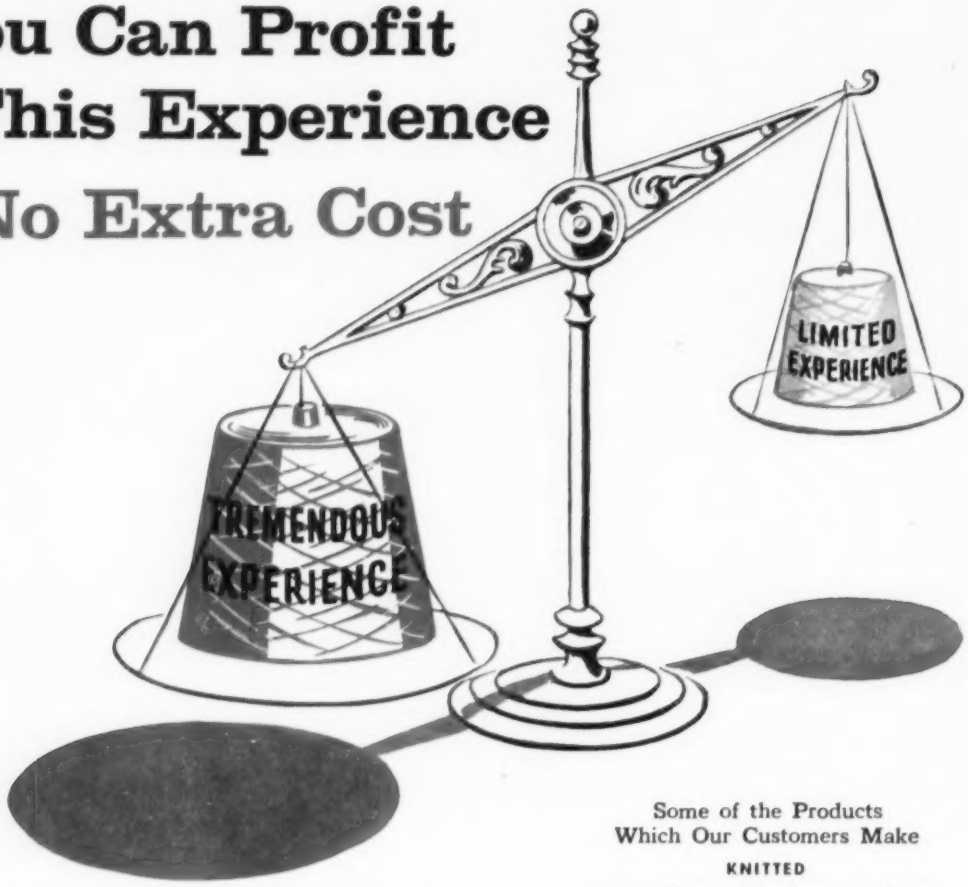
The Helanca yarn Type SW possesses the properties of stretchability and bulk, imparted by varying twist ratios, temperatures, and tensions in the throwing operations. The degree of stretchability (that is pre-determined) and the resultant high bulk produced are dependent upon careful control of these variables; and during throwing, rigid quality control is maintained to insure yarn uniformity. An over-all quality control program is maintained and conducted by the Heberlein Patent Corporation, whose technicians periodically visit individual throwsters to check on quality of production.

In the single stage, continuous throwing process, Universal Winding Company equipment is generally used. Essentially, in the process, a false twist is imparted to the yarn while it is in a heated (thermoplastic) state. This twist is then removed. Upon shrinkage and relaxation of the knitted fabric, the yarn achieves bulk (with stretchability), producing excellent coverage.

Besides stretchability (with good recovery from elongation) and bulk, which combine to produce a texture that can best be described as soft and likened to a bouclé, the sweater has other distinguishing properties. It can be machine-laundered at warm temperatures and, being nylon, is inherently fast drying. Sweater surface can be altered from a textured hand to a smooth one by

*Helanca is a trademark owned by the Heberlein Patent Corp.

You Can Profit By This Experience At No Extra Cost



EACH YEAR we supply a great variety of colored yarns to over 500 manufacturers in more than 30 different industries. The fibres that we dye and some of the products that our customers make are listed herewith.

You can profit by this experience, and the know-how it has given us, at no extra cost. For instance, we can advise you on the best type of dye for the purpose, fashion trends in colors, the best method of rewinding from Franklin Packages (if you do your own winding), the best yarn put-up, the proper yarn conditioning, correct finishing procedures and the best way to handle dye lots in the mill.

Since it costs you no more, why not take advantage of the *extra* service that our 5 strategically located plants can give you?

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Sports Wear • Slip Covers • Gloves Underwear • Hosiery • Trim • Wash Cloths • Swimwear • Foundation Fabric

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*Dupont's acrylic fibre.
**Dupont's polyester fibre.

varying yarn deniers and knitting techniques. It holds its shape well and has excellent draping qualities. Being of filament yarn, it will not pill or ball. And what is most important to the consumer, the sweater is knitted to a specific size.

Yarn Tension and Machinery Cleanliness Important. The manufacture of the sweater is not without problems, however, and certain precautions must be observed. At Garden State Knitting Mills, Inc., a 2-ply, 200-denier, 68-filament Helanca yarn Type SW is used. The sweater is knitted with a low number of stitches per inch on a 13-cut transfer machine using high yarn tension (see photograph for details). A lower number of stitches is used than when knitting with Orlon, as the shrinkage is much greater.

Much attention must be given to uniformity in knitting, for as stated earlier sweater texture can be modified by varying knitting techniques. Management in this mill found it advantageous to add another man per four knitting machines to insure uniformity of production.

When changing over to the Helanca yarn Type SW it is essential to clean the machine thoroughly, as fly — particularly from yarns of another chemical class — will appear as specks in the finished sweater. The presence of dirt and fly can also cause friction of the needles in the channels. If a needle should bind, for example, a streak can result upon dyeing due to the variation in the tension. Precautions are also taken to prevent snagging and breaking of filaments during take-up.

The fabric as it comes off the knitting machine is very loose and quite smooth, with the individual stitch loops quite prominent, giving a slightly fish-net like appearance. At this point there is little evidence of crepiness and little or no stretchability.

Shrinkage and Relaxation Rapid and Simple. In a cut and sewn sweater operation, the next step is shrinkage and relaxation of the fabric. The fabric strips are carefully loaded into a washer (see photo) and agitated for 5 minutes at 90 F, with or without the pres-

The fabric is loaded into a washer where relaxation and shrinkage take place for five minutes in a bath temperature of 90 F.

The equipment for relaxing, extracting, and drying is laid out to facilitate materials handling. The operator is preparing to unload a batch from the tumble dryer after the fabric has been exposed to a dryer temperature of 150 F for about 13 minutes. If the extraction is carried too far, the fabric receives permanent wrinkles. Below, the individual fabric strips are steamed to proper dimension prior to cutting.

THIS MAN HAS HUNTED ALL OVER CREATION. But when it comes to tracking down a complete selection of needles he knows right where to go. After all, there is only one correct answer—for knitting, sewing, tufting, or felting —it's **THE TORRINGTON COMPANY.**

Torrington, Conn., U.S.A. Branches in New York, Philadelphia, Boston, Chicago, Greensboro, St. Louis. Pacific Coast Representative: E. G. Paules, Los Angeles

ence of a detergent. The fabric is now of a permanent textured appearance.

Following this, the strips are loaded uniformly into a centrifuge, where the degree of extraction is carefully controlled. This is a critical operation and if carried out to extremes will permanently set wrinkles that will appear prominently in the finished sweater — wrinkles which cannot be removed by any amount of pressing or rehandling. Experience actually dictates the amount of centrifuging necessary.

The extracted fabric is then loaded into a tumble dryer (see photo on page 133) and is usually sufficiently dry after approximately 13 minutes in a temperature of 150 F.

To facilitate cutting, the individual strips are then steamed on an open-top steam table (see photo on page 133) to uniform dimension.

In assembling the garment, nylon thread is used, as it possesses comparable dyeability to the body of the sweater. When making a cardigan sweater, the grosgrain is also of nylon, which may have a different degree of shrinkage in dyeing than the body of the sweater. Garden State Knitting Mills have experimented with samples from various sources, finally establishing sources of supply that produce predictable results in processing.

Dyeing and Final Make-Up. The sweaters now cut and sewn to size, but without button holes, are sent to the dyer. As puckering was encountered when nylon sewing thread was used for button holes, the button holes are now sewn with a cotton thread after dyeing.

In the last operation, following dyeing, the completed sweater is given a pressing, using a top buck with relatively high pressure.

Market acceptance of the sweater made of Helanca yarn Type SW could not have been achieved without imaginative styling, merchandising and advertising, coupled with quality throwing and know-how in knitting. The first utilization of the Helanca yarn Type SW in the trade was the result of such cooperative effort on the part of the Boepple Sportswear Mills, stylists and merchandisers; Leon-Ferenbach Company, throwsters of the yarn; and the Garden State Knitting Mills, Inc.

Manually operated, this carton stacker

Saves $ $

Staff prepared

Exclusive

A MANUALLY operated hydraulic carton stacker in operation at Cornucopia Corp., Belmont, N. C., is doing a good job and cuts labor requirements for stacking cartons by 50 per cent, according to a spokesman for this progressive mill.

The unit has a 500-pound capacity and is called a "Lift Stacker" or "Shop Caddy." The hand jack lifts cartons weighing up to 500 pounds a distance of approximately 50 inches above floor level for stacking and maneuvering for storing. Stacking permits cutting floor space requirements for storage by 50 per cent.

The stacker has cut labor requirements in half in the storage and carton handling department. Experience at this mill indicates that the device paid for itself in one month in terms of labor savings. The stacker was supplied by Grand Specialties Co., Chicago 22, Ill.

VICTOR FINISHING STARCHES

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Victor 10-55

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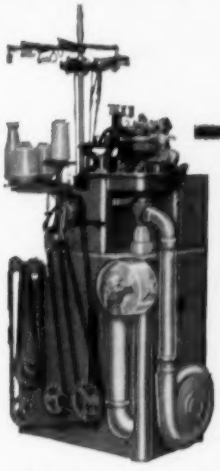

* The only electronically controlled circular knitting machine that offers

- Single or double feed operation
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Keep growing in this booming seamless market . . . investigate the advantages of the amazing Fidelity "400" and "474".

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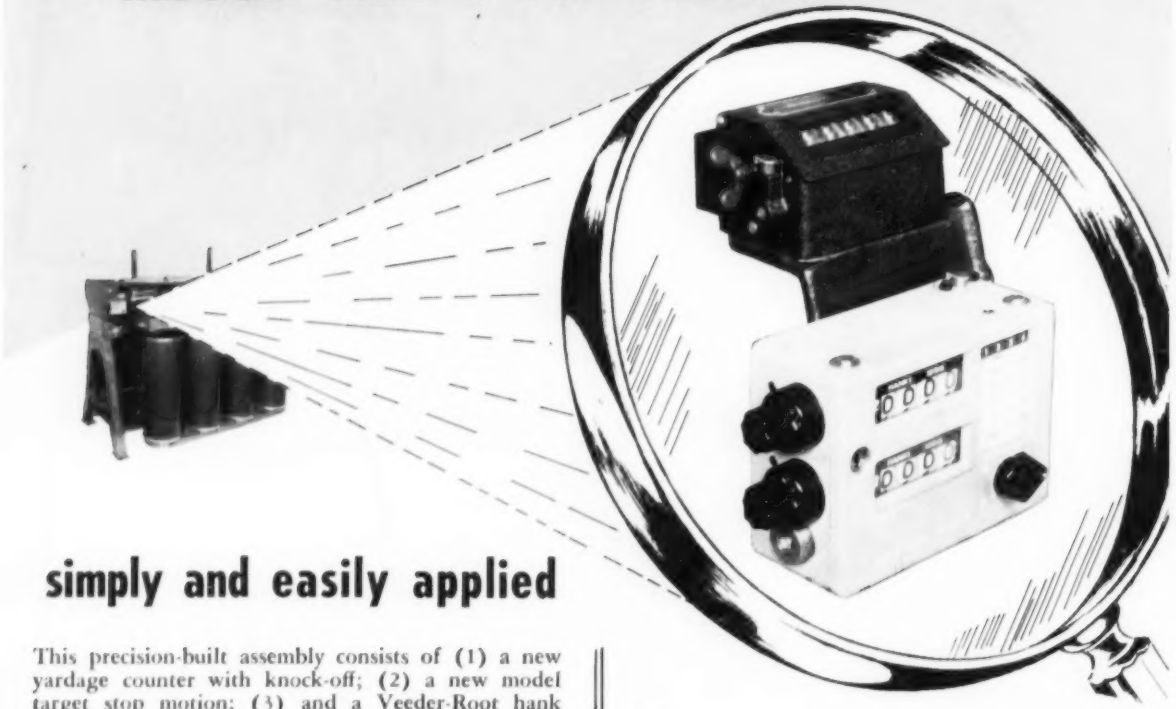
NEW SACO-LOWELL
PREDETERMINED YARDAGE COUNTERS
for drawing frames

- **FOR EXACT SLIVER YARDAGE CONTROL**
- **REDUCED CREEL & CAN WASTE**

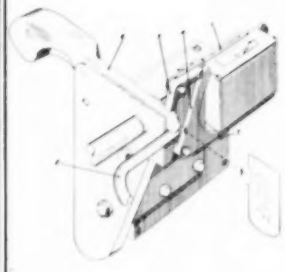


simply and easily applied

This precision-built assembly consists of (1) a new yardage counter with knock-off; (2) a new model target stop motion; (3) and a Veeder-Root hank clock with horizontal drive shaft.

Available for one, two, three shift operations, the new Yardage Counter is easily installed on all conventional Saco-Lowell drawing frames. The unit contains fewer moving parts and is the most accurate of its type available today. New Saco-Lowell Predetermined Yardage Counters are designed for mills desiring precisely controlled doffing cycles to eliminate piecings.

New and improved methods of controlling waste cut operating costs. These new Saco-Lowell Predetermined Yardage Counters are another step to increased spinning room efficiency and production. The relatively small investment for this new assembly is soon paid for by the elimination of needless and costly creel & can waste.



Predetermined Yardage Counter (1), as seen from the rear, stops the drawing frame by means of its standard knock-off lever (2), through a preset trip lever (3), and two small knock-off levers (4 and 5) on the new target stop motion. Weighted doff signal (6) is released when trip lever (3) rises. Unbalanced drawing frame knock-off lever (2) is simultaneously released, and its other end engages the striker dog at the back of the beam to stop the machine.

Hank Clock Bracket (3D2671) — for use on lap-back drawing frames — fits on the foot-end roll stand, which has an opening in it so that the hand clock can be coupled directly to the back calender roll shaft. Three hex cap screws and lock washers secure the clock to the bracket from the rear.

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HOW OTHER MEN MANAGE

• Letters to Editor • Technical Discussion •
• Manufacturing Briefs • Kinks & Short Cuts • Comments from Readers •

Write to the Editors!

Readers are invited to make use of this section for further discussion of published articles, or for discussion of problems arising in the plant. Names will not be used without permission. Payment is made for practical articles or for letters containing manufacturing information.

Address: Editors "Textile Industries," 806 Peachtree St., N. E., Atlanta 8, Ga.

Tips on setting the spinner's job load

EDITOR TEXTILE INDUSTRIES:

I am sending you a little discussion about the way we handle spinning job assignments in our plant.

Before establishing job loads we ascertain the following:

1. Process data — machine operations and material data for the present spinning equipment (speed, package size, etc.)
2. Job description
3. Development and application of time standard
4. Standard value calculation sheets
5. Element times

After all this information is found by actual tests (which include fast and slow operators) we have the figures to use in establishing job loads. Sometimes we make 20 tests to get a good average study.

Each of our jobs is calculated at 125% pace. That means that with a spinner's job set at 100%, the spinner has the opportunity of making 25% bonus. We generally say this spinner has a rating of 25.

On our bonus plan, every job in spinning is based on the number of ends down, and it so happens that a spinner's job (or a job in any of our departments) changes two or three times a year.

The number of frames per spinner's job will be increased if the ends down decrease in the spinning room. The standard end break we use is 40 per 1000 spindle-hours.

Of course in giving more frames to the spinner we reduce the number of employees. In doing so we earn more money for the company. So we do everything in our power to keep the work running good and the ends down figure low. If the ends down figure increases, the information is passed on to our standards office. The time study men re-study the job and make the necessary changes — called "routine" ones.

When we start a new job or introduce a new method the time study men follow the operators and check for a week or more to find out how the operators manage their new job and to instruct them on procedures.

We permit our spinners to decide their job loads in part. For instance: If a spinner is running 2400 spindles when the ends down figure is 40 per 1000 spindle-hours, and the ends down figure changes until we find that the same spinner should be on 2700 spindles, she has the option of remaining on the same number of spindles at a reduced rate. In this case she will receive 90% of her base pay because she is operating only 90% of a job.

After a new job is established the spinners always find short cuts to reduce such elements as walking time and to increase production in general. Sometimes the bonus which is calculated at 25% runs as high as 35%. I have noticed that this happens similarly on every new job. We make no changes in jobs without first having the standard office establish the loads.

In the spooler room we give fractions of a minute per cheese,

KINK CONTEST!

$100 will be awarded the winner

Send your entry now! This contest ends August 15, 1957

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance. The $100 award will be made as soon as all entries are judged.

The contest rules are simple:

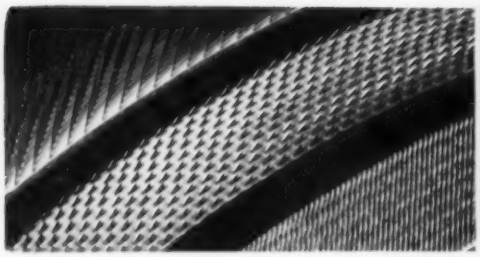
► All contributions must be postmarked not later than midnight, August 15, 1957.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance — no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously and must not be submitted to any other publication.

Send your contest entry to: The Editors, TEXTILE INDUSTRIES, 806 Peachtree St., N. E. ta 8, Georgia.



CARDER'S CORNER by Ashworth

CARDERS!! The purpose of this page is to serve as an open forum each month. If you have problems which you would like to throw open for discussion or if you have further comments on problems already presented, write to CARDER'S CORNER, care of Textile Industries, 806 Peachtree Street, N. E., Atlanta 8, Georgia.

Volume 1, Number 7

"WOOLEN YARN VARIATION"

Our Woolen yarns have an acceptable "average" weight, but we have found the variation from end to end to be too great, and we suspected feeder troubles.

We used the following suggestions, looking for anything else which might contribute to faulty machine operation.

Mill #7

1. Make sure the blend is evenly oiled and thoroughly mixed.
2. Check every set screw and bolt for tightness.
3. Check the scale pan for balance. Balance it to weigh out the stock finely.
4. Set the strip apron deep enough into the spike apron to keep the spikes cleaned of all stock which might collect and shed in lumps.
5. Set the comb with care. It must be close enough to the spike apron to keep the spikes clean. Otherwise lumps at this point will pass up and over the spike apron and onto the scale pan. If this pan is balanced properly, it can be upset by the presence of lumps. Any improper feeding at this point introduces an improper feeding action into the hopper.
6. The compensator must keep a constant pressure of the stock against the spikes at all times. Check the time required to fill the scale pan, and if it varies as the load in the hopper changes, it needs adjusting. If working properly, it will fill in the same time when the hopper is one-third full as when the hopper is filled to capacity. The pan will operate more accurately on 16 oz. loads than it will on 8 oz. loads. One source of variations is that of the strip apron, which deposits a measure of stock on the pan after a full weighing has been received and the clutch tripped.
7. Check the table or receiving apron for slippage. Check the layer of stock at this point with the finger tips. It should be uniform — do not trust the eye to do this. The stock should be closely packed; and the shorter the stock the more difficult this generally is.

ASHWORTH BROS., INC.

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and fractions of a minute on the warpers. We base this on units of 1000 yards of yarn.

We make allowances for stoppages beyond the operator's control. Among them are allowances for power failure, repairs, or machine cleaning. Stoppages caused by operator negligence are not paid for. We keep our indirect operators limited to 25 per 100 direct operators.

CONTRIBUTOR No. 9001 *(Canada)*

Spooler pocket waste exhausted into dust pit

EDITOR TEXTILE INDUSTRIES:

As you know the fan draws the waste from the spooler bobbin pockets up to the condenser, and for many years we have been using two condensers and were satisfied with them.

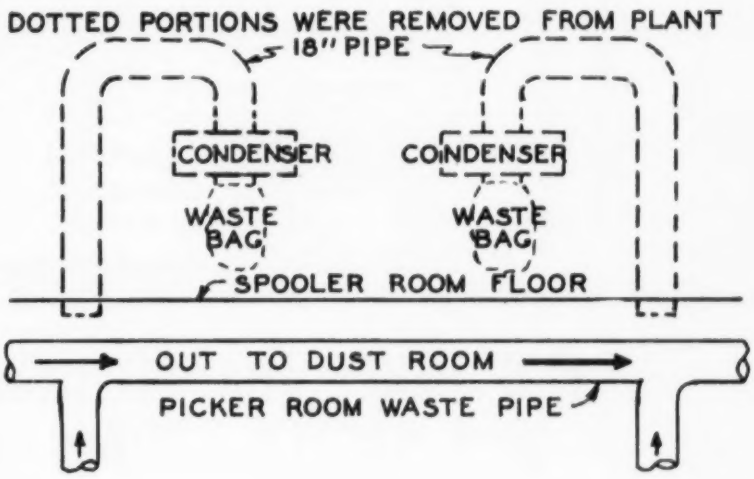
These condensers ran three shifts per day with the spoolers, making a total of 125 hours per week.

The condensers and the motor cost many thousands of dollars.

There were two 12″ pipes running under the spooler, one on each side, and each bobbin pocket is connected to this pipe to draw out all the fly waste or dust which finally passes through the condensers to fall in the waste bag. Full bags were removed every day and replaced with empty ones. This was done by the fixer who spent one hour a day on this job; as this waste bag is overhead, he used a ladder to remove it. It was a very dirty job.

After nine years of operation, we made a study on these condensers and found out that we were losing money because the expenses in power and repairs were too high in comparison to the waste we were selling.

After a week of study (125 hours actually) which represented three shifts we had removed only 120 pounds of waste from the bags. This waste was sold at 6¢ a pound.



This average of one pound of waste per hour for the two spoolers is very small when compared with the cost of the two condensers and their maintenance.

We made a change. We are collecting the waste from our spoolers the same way (I mean there is nothing changed on the spoolers — see the accompanying sketch showing the old and the new arrangements).

The pipes going to the condensers have been cut in two under the spooler floor and connected on the hoppers in the picker room. The spooler waste is going out to the waste or dust house together with the picker room waste, thus eliminating the two condensers and the necessity for emptying waste bags every day.

We are saving about $1000 a year on the maintenance of these two condensers. We also have gained an 8′ x 10′ area of needed floor space. Also the condensers are for sale, and the room is cleaner.

CONTRIBUTOR No. 8999 *(Canada)*

XD temples mounted on W-3 looms

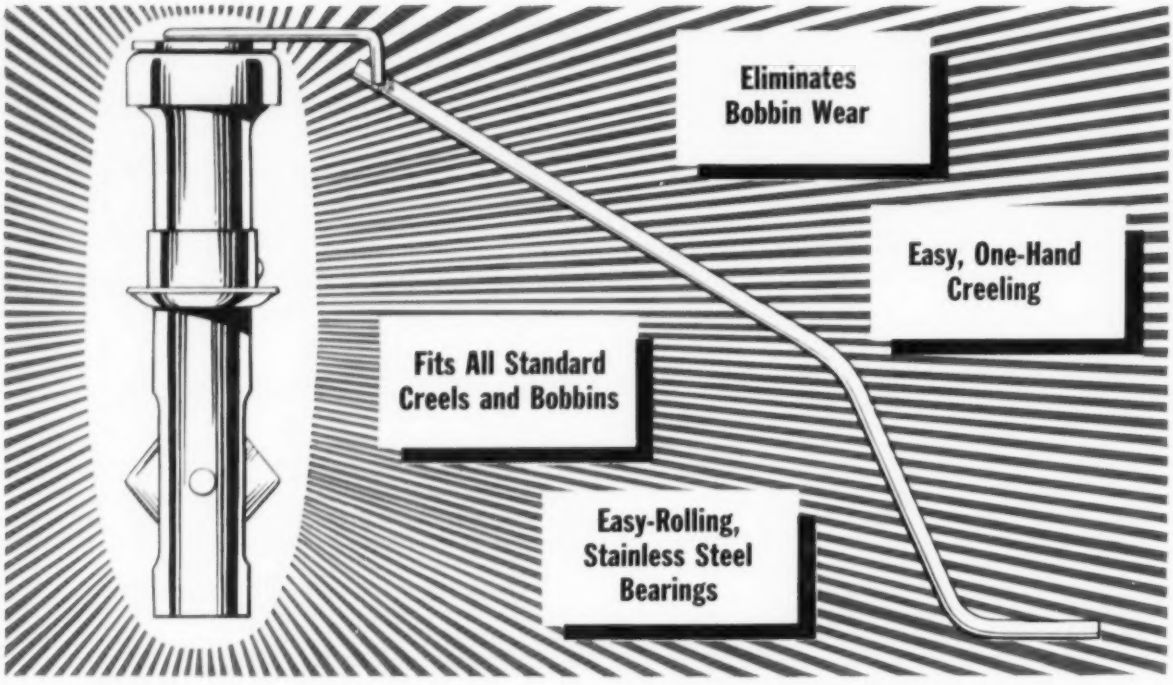
EDITOR TEXTILE INDUSTRIES:

We wanted to run on our W-3 looms a very heavy cloth — an eight-harness satin 61″ wide, weighing 168 lb per 100 yd. Good edges were important; the fabric required crow hops to be used in weaving.

It would have taken some time to develop crow hops for the W-3 pin temples, but we happened to have on hand a few sets of XD Draper temples already fitted with crow hops — temples which we keep ready for use on some styles.

To fit them to the W-3 looms all I had to do was cut out ¾″ of the center. This brought the temple to just clear the race plate by ⅛″. The stands had to be reversed, of course, so when they were fastened in the temple slides the stands faced the ends of the lay.

When this was done the temples

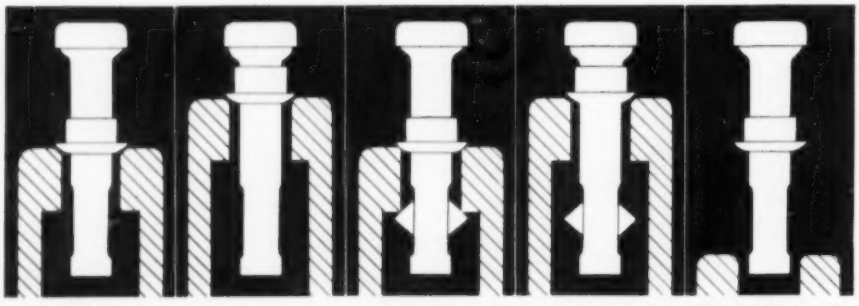


IT'S HERE! THE ALL-NEW BENDIX SPIN-MASTER BOBBIN HOLDER!

Here's the greatest improvement in bobbin holder design in many years—the Bendix* Spin-Master! Made by the manufacturers of the reliable Eclipse Bobbin Holder, the Spin-Master is adaptable to *all types* of creels and to practically *all sizes* of bobbins. Its exclusive nylon latch holds the bobbin securely yet does not gouge or wear the bearing surface. Because of its unique design, the Spin-Master makes creeling a one-hand operation. Its extra-free rolling action is superior to that provided by any other bobbin holder. And, of course, it is thoroughly corrosion resistant. Order today, or, if you prefer, write for additional information.

*REG. U.S. PAT. OFF.

HERE'S HOW IT WORKS



Bobbin holder slides easily and freely into top of bobbin. Nylon latch is concealed within the barrel of the holder.

Bobbin is pushed up against collar of bobbin holder. At this point, latch is still concealed inside the bobbin holder.

As bobbin is allowed to drop, collar of bobbin holder slides down to original position and latch snaps into place, suspending bobbin.

To release bobbin from holder, the bobbin is again pushed up, raising the collar of the holder. Latch is still securely in place.

When bobbin is again allowed to drop, latch retracts into body of bobbin holder, so that bobbin may be easily removed.

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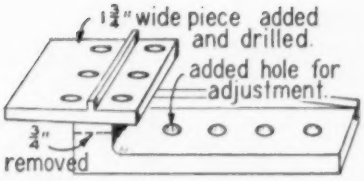


would naturally not fit in their grooves, and the holes would not be in line. We welded a piece of stock on top of the stand and made new holes.

They work so well that I am having some stands made up to keep on hand for future change-overs. If necessary the temple stands could be restored to their former shapes by reinserting the cut-out portions or otherwise blocking up.

To make the cloth level with the temple rolls it was necessary to add another rod across the loom in front of the temple stands. I used a lease rod for this purpose, and left it resting against the stands.

CONTRIBUTOR No. 8917

HOW OTHER MEN MANAGE

Stripper for sloughed quills

EDITOR TEXTILE INDUSTRIES:

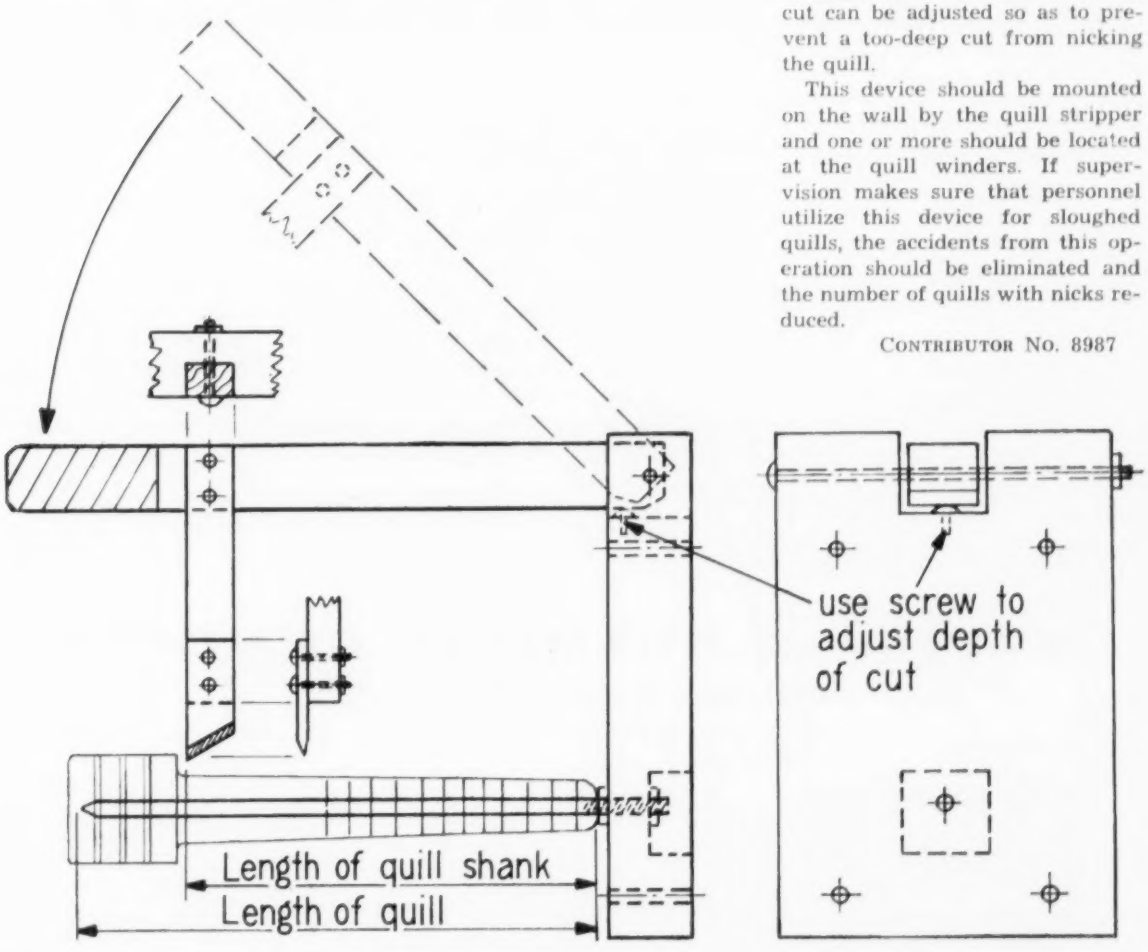
In many plants it is the practice to strip yarn from a sloughed quill by using a pocket knife. This method has the drawbacks of quills being nicked and gouged (causing damaged yarn on future packages), and the drawback of personnel being badly cut whenever the knife slips. To overcome these difficulties a mill can make a device to position a quill to a cutting edge that will slash through the sloughed package.

This proposed cutting device could be made in a mill shop with scrap materials that are available. The length and the diameter of the pin for the quill and the dimensions of the operating handle will depend on the size quill that is being used in the plant.

The quill is placed tip foremost on the pin and the handle then lowered and held firmly. By withdrawing the quill with the other hand the blade will slash through the yarn. The depth of cut can be adjusted so as to prevent a too-deep cut from nicking the quill.

This device should be mounted on the wall by the quill stripper and one or more should be located at the quill winders. If supervision makes sure that personnel utilize this device for sloughed quills, the accidents from this operation should be eliminated and the number of quills with nicks reduced.

CONTRIBUTOR No. 8987



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At a time when this broadly useful intermediate and raw material is often in short supply, your records should show that Stauffer has huge and growing facilities for the manufacture of Methylene Chloride.

The Stauffer plant at Louisville supplies Methylene Chloride in drums of 600 pounds net capacity . . . in tank trucks . . . in tank cars of 4000, 8000 and 10,000 gallons . . . and in barges. Drum shipments are also made from warehouse stocks at Chicago, Houston, Akron, Cleveland, Pittsburgh, Boston, San Francisco, Los Angeles, Portland, Ore., and Niagara Falls.

Stauffer Methylene Chloride meets the highest standards of purity.

Stauffer can also supply you with Carbon Bisulfide, Perchlorethylene, Trichlorethylene, Carbon Tetrachloride and Chloroform. A new brochure on Stauffer Chlorinated Solvents will shortly be ready for mailing. Kindly advise on your letterhead if you would care to have a copy.

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Pointers for the card grinder

EDITOR TEXTILE INDUSTRIES:

Just another word to the card grinder, if you please, about the care of clothing, and about better carding. This might help some young grinder if he wishes to get an advancement; and please do not assume that I am referring to any one card grinder.

A lazy man will never make a card grinder, much less a boss carder. And speaking of boss carders — they are not a nosey lot; they check on grinders because they (the bosses) have bosses too. That plus the fact that as a group they have enough pride in departments to move them to keep their jobs on top explains why the bosses so often probe around the grinder's section. A lazy man will never have the zeal to grind cards well nor to lead others to do a good job of grinding.

To be a good grinder, one must look for the little things about his job which will lead eventually to trouble. The good boss carder is likely probing around the grinder's section looking for just those "little things." For instance, Mr. Grinder, when did you last brush the cylinder and doffer clean before you laid the grinding roll in the stands? Did you inspect the cylinder and doffer for mashed-down wire? And did you scrape up any mashed-down wire you found? Did you examine the cylinder and doffer at several points for loose clothing? Was the fillet on the grinding roll too slick for a good pointing job?

Mr. Grinder, I noticed today that your grinding rolls were not turning; and I noticed that the long slot in the grinder shell was turned downward and oil was dripping from the shell onto the cylinder clothing.

Now, notice this in stopping grinding rolls: turn the set straight up so it won't drip onto the card clothing and soften the wire foundation. Not only will oil soften the foundation, but it spoils the emery fillet very quickly.

As soon as the doffer and cylinder start, this oil will sling to the points of the wire and onto the emery fillet. Dust and emery cuttings together soon fill up the emery fillet. Furthermore, some of the oil will sling onto the plates and frame inside the card, causing what is known as snowballs at the doffer selvages — fiber dragging on the screens will roll into balls at the selvages.

All grinding rolls should be stripped of fillet now and then; and the traverse forks should be examined at intervals. The traverse shell should be cleaned by placing it in a strong rack threading a rope or band through it. This band should be caught at each end and the band worked back and forth through it to wipe out the dust and emery cuttings which collect inside the shell. Do these things before the "nosey" boss finds them.

CONTRIBUTOR No. 9002

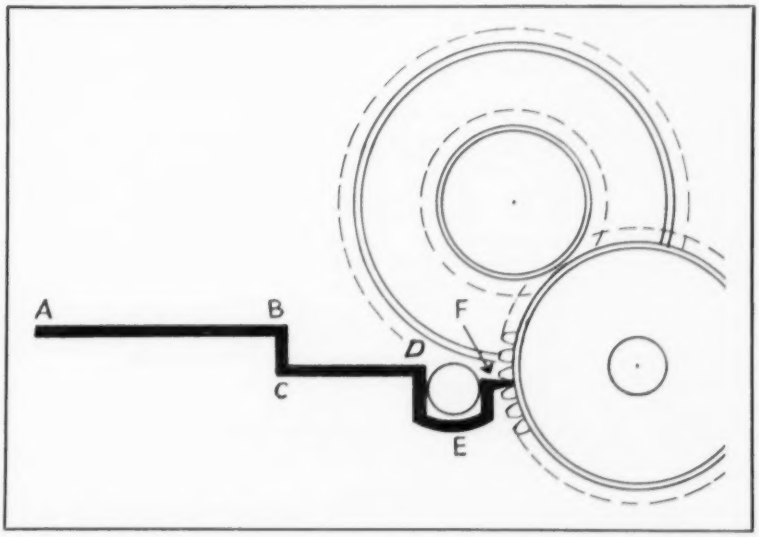
For ends-down-free draft gear changing

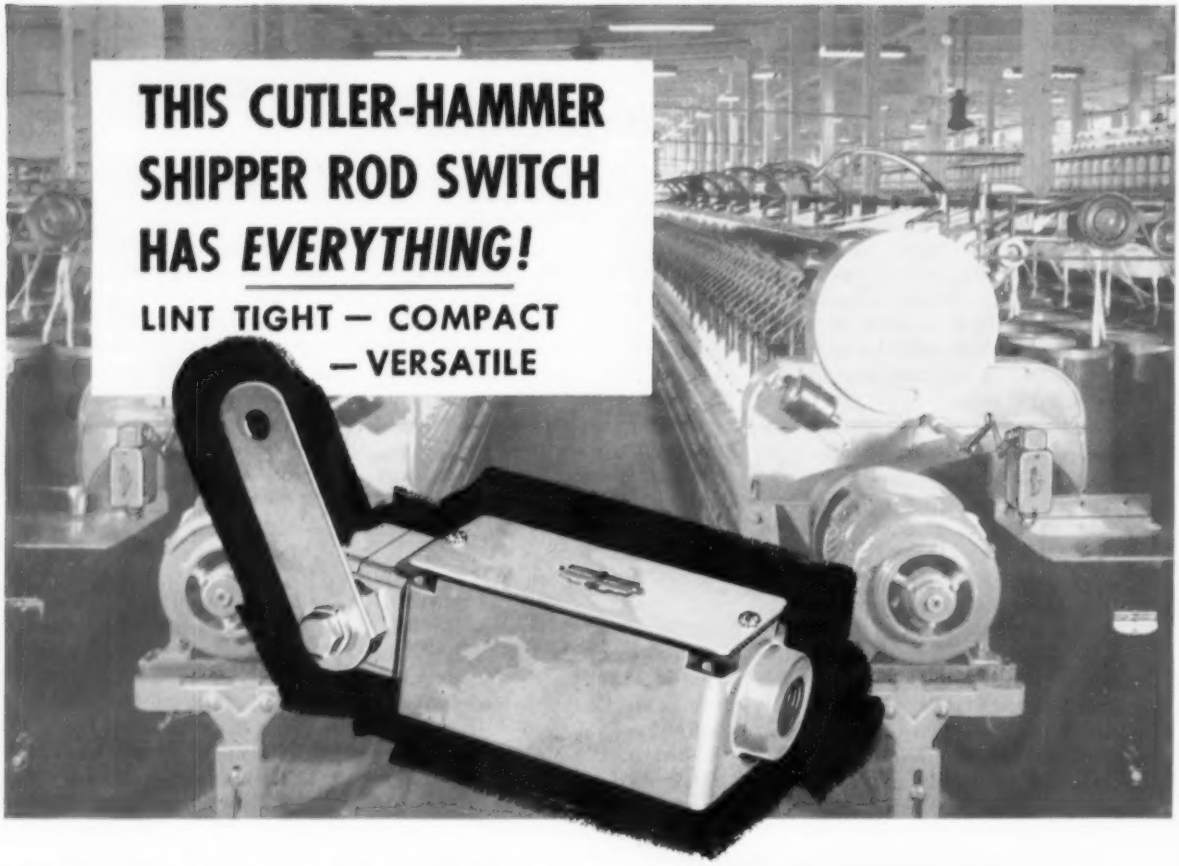
EDITOR TEXTILE INDUSTRIES:

The following tool is for holding the back and middle rolls on long draft spinning while changing the draft gears.

The torque present in the middle and back rolls on long draft spinning causes the rolls to turn backward when the draft gear is disengaged with the back roll gear. This backward turning causes the ends to be cut down, which in turn causes considerably more work to be done in putting up ends after the draft gear is changed. The tool is very simple but effective in preventing this condition.

Although this tool is made for use on Whitin F-2 long draft and Whitin changeover spinning, variations can be made for use on other makes of spinning with dif-





The new Cutler-Hammer 10252 Shipper Rod Switch provides every feature the textile industry wants. It's *fully* lint tight. It's *amazingly* compact. It's *really* versatile . . . and here's why.

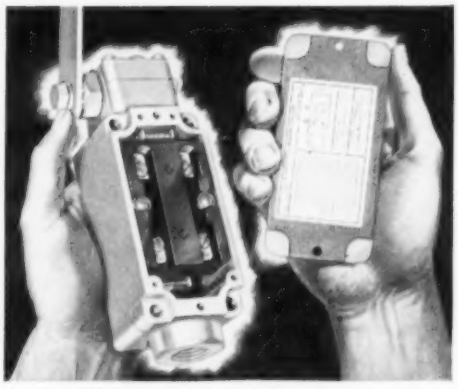
LINT TIGHT—Lint, the big enemy of textile machines and control, is locked out of the 10252. Check these features of construction: 1. heavy die cast enclosure; 2. threaded conduit opening; 3. external mounting holes; and 4. heavy gasketed cover.

COMPACT—Small enough to fit in the palm of your hand, but big in performance. Large heavy duty butt type contacts and a sturdy mechanical mechanism assures years of dependable economical operation. Isolation of the electrical and mechanical mechanisms prevent the wires from "jamming" the switch mechanism.

VERSATILE—The 10252's mounting versatility cuts installation costs to a minimum. Here is a shipper rod switch which you can mount in any position, rotate the lever head to the correct motion plane, select either clockwise or counter-clockwise lever action without altering the switch mechanism, and accurately position the lever for precise operator "feel" and "pin-point" jogging.

The unique double contact design provides both positive motor starting and low voltage protection.

For complete information see your authorized Cutler-Hammer Distributor or write on your company letterhead for Pub. EL-115, Cutler-Hammer Motor Control for Textile Machines. CUTLER-HAMMER, Inc., 1456 St. Paul Avenue, Milwaukee 1, Wisconsin.



The perfect shipper rod switch *for roving frames—drawing frames—combers—narrow fabric looms—carpet looms.*

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C-H

★ ★ ★

ferent shapes of gear cases.

The tool (see illustration) is made of stock ⅛" thick, and 1¼" wide. The section A to B can be any length desired. B to C, bent to a right angle, is two inches. C to D, bent to a right angle, is four inches. D to E, one and one-fourth inches. E to F is one and one-fourth inches.

The distance between D and F should be one inch. The end at F is bent to a right angle and is ground so as to mesh with the teeth of the back roll gear.

Place the tool with the U-shaped portion (D,E,F) under the front roll directly in front of the back roll gear, bringing point F to mesh with the teeth of the back roll gear.

As the draft gear is disengaged, raise the end A slightly, turning the back roll gear about one tooth.

This will take the tension off the back and middle rolls.

If the draft gear doesn't mesh with the back roll gear, raise end A until they come into correct alignment.

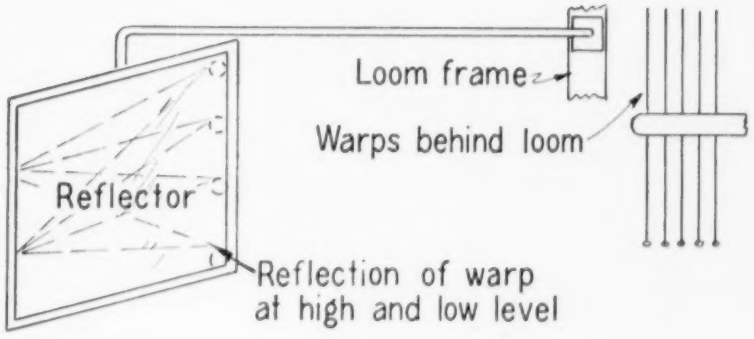
CONTRIBUTOR No. 9003

Mirror saves time for the weaver

EDITOR TEXTILE INDUSTRIES:

Pile fabric looms, and those using several beams and rollers, tend to hide broken ends from the weaver who may easily have "traps" of many warp threads before realizing the cause of the trouble. We fixed reflectors about 24" square at an angle of about 45 degrees at each end of the loom, opposite the warp sheds, and about 2'8" from the loom frame.

The exact position most suitable for the weaver can be discovered by manipulation, and the result is that by a quick glance in each reflector — see the illustration — the weaver can see when an end is down with leaving the weaver's alley.



CONTRIBUTOR No. 9006 *(England)*

Skein holder made from spare parts

EDITOR TEXTILE INDUSTRIES:

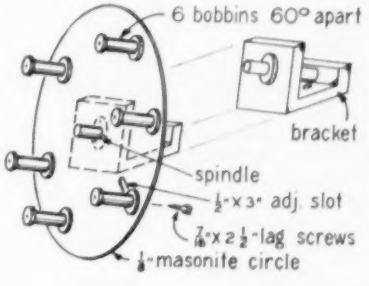
Once when we were in a hurry for a skein holder I made one from the materials we had on hand.

I used a spindle and bracket from an old skein winder, some odd wooden bobbins, six 7/16" x 2½" lag screws, three small stove bolts, and a piece of tempered hardboard ⅛" thick.

To build it from the above materials one needs only to proceed as follows:

Cut a circle from the hardboard about 2" larger than is needed. Mark a circle on the cut hardboard the size of the skeins to be used. On this marked circle are mounted the wooden bobbins 60 degrees apart. Bore holes through the hardboard to take the lag screws which are passed through the circle and into the base of the bobbins.

Slot the hardboard at one bobbin position to be used as a release and take-up for placing and removing the skeins. The slot should be about ½" x 3", with the slot running lengthwise toward the center of the circle.

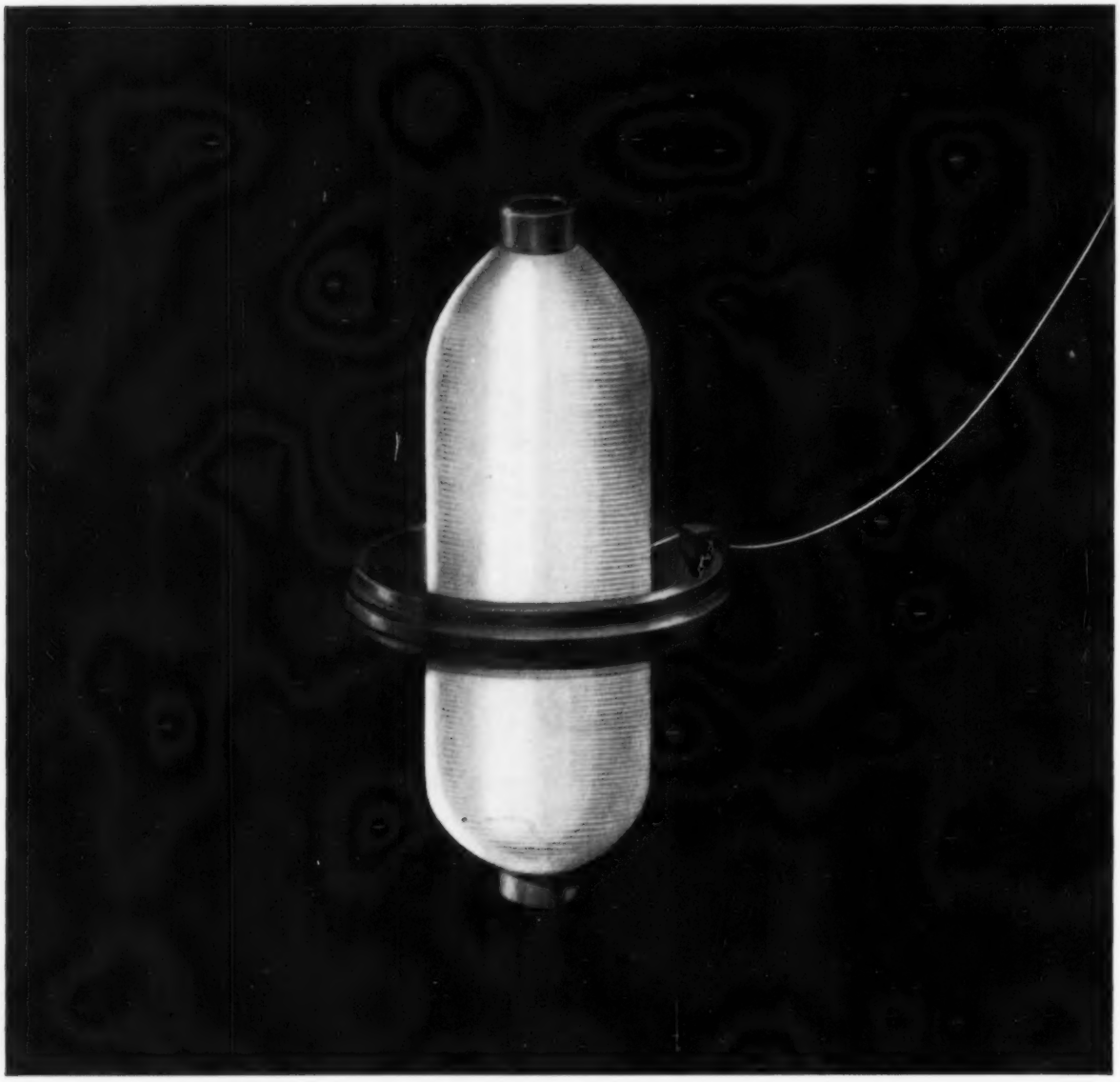


The head of the lag screw to be used at the slotted position may be threaded to receive a wing nut to facilitate loosening and tightening. An alternate choice is to slot the head of the lag screw and braze a washer in the slot to act as wings.

Bore a hole in the center of the hardboard circle to fit snugly around the spindle on which the circle is to be mounted. Also drill three small holes through the hardboard and the spindle whorl to receive the stove bolts.

Mount the spindle bracket on a light portable stand, insert the spindle, oil lightly, and it is ready for use.

CONTRIBUTOR No. 9004



reduce wear, lengthen life of spindle bearings

Spinesso is a premium-grade lubricating oil for both spinning and twister spindle bearings. Its exceptionally high oxidation stability affords maximum bearing protection – and extends the time between lubrications considerably. Spinesso's high resistance to oxidation inhibits the formation of dark, sludge-like deposits that cause friction in the bolster – and stain yarn.

Spinesso is specially processed to provide an extra measure of protection against wear and to materially reduce rusting and pitting. Thus the problems most frequently encountered in high-speed bearing operations in humid textile mill atmospheres are minimized. Spinesso gives positive protection at all times – even at start-up when immediate and effective lubrication is essential.

Textile mills that have switched to Spinesso report *cleaner, longer-lasting spindle bolsters and blades—with less frequent lubrication.*

Spinesso is available in *three* viscosity grades. Get the whole story on this fine product . . . contact your nearest Esso Standard Oil Co. Division Office: Boston; Pelham, N. Y.; Elizabeth, N. J.; Bala-Cynwyd, Pa.; Baltimore; Richmond; Charlotte; Columbia, S. C.; Memphis; New Orleans.

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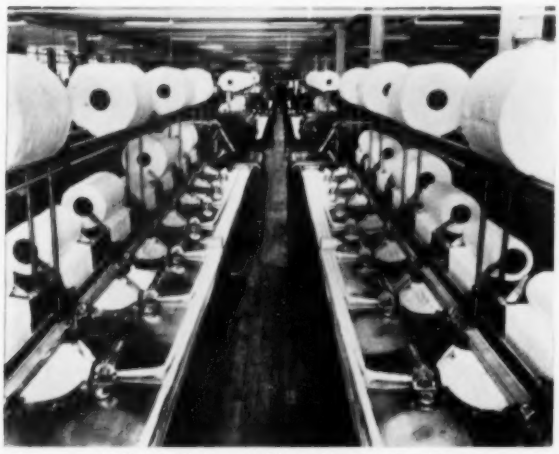
NEW EQUIPMENT PARADE

Machines and Equipment . . . Supplies and Services . . . Dyes and Chemicals . . . Books

Please note: Claims made in all of these announcements of new developments are of necessity based upon information furnished by the respective suppliers.—The Editors



Mill installation of Whitin Super J Combers

Comber sustains 150 nips per minute

The Super J comber will produce high quality sliver at a constant rate of 150 nips per minute. The successor to the Model J, the new comber features changes in the design of the nipper assembly and detaching roll size and weighting which have increased production to 50 lb per hour at 100% efficiency with greater nep removal.

The machine is practically vibration-free, is eight-headed, single-sided, and has approximately 50% fewer parts than conventional combers. It uses the reverse feed principle—fringe feeding takes place during the backward motion of the nipper frame. The time required for one complete cycle is .40 seconds.

The addition of a new spring cushion plate arrangement, redesign of the cushion plate, feed roll plate and nipper knife, plus an increase in diameter of the detaching rolls from 1⅛" to 1¼", secures higher production and maintains high quality. To accommodate heavier laps, increased spring weighting has been applied to the nipper frame and feed rolls.

More effective combing by the top comb is produced by the new spring cushion plate. This plate is a thin broad spring placed directly above the cushion plate. It is depressed by the descending knife, and rising as the knife opens, first elevates all the fringe to the top comb and guides the leading edge of the fringe upward and directly into the bite of the detaching rolls without any curling or rolling of the leading fibers. Its function is also important in the use of a lap weighing as much as 900 grains.

The comber combines the output from the eight heads into one or two slivers as desired by the mill. The draw box is a four-over-five roll arrangement.

The mechanism for driving the detaching rolls is extremely simple, consisting of a cam, follower, and planetary gear train. The whole motion has only nine gears which are always in mesh. The detaching roll drive does not use clutches, ratchets, pawls, or other similar devices which wear out quickly or break.

The lower segment of the comb is curved so that the top comb is nestled in very close to the bite of the top rolls. The top comb can be adjusted to hold its position so that it operates the same at all times.

The comber can be set to take out the desired amount of waste in a short time. The waste index is moved and reset by means of two nuts, an adjustment which controls all eight heads.

Whitin Machine Works, Whitinsville, Mass.

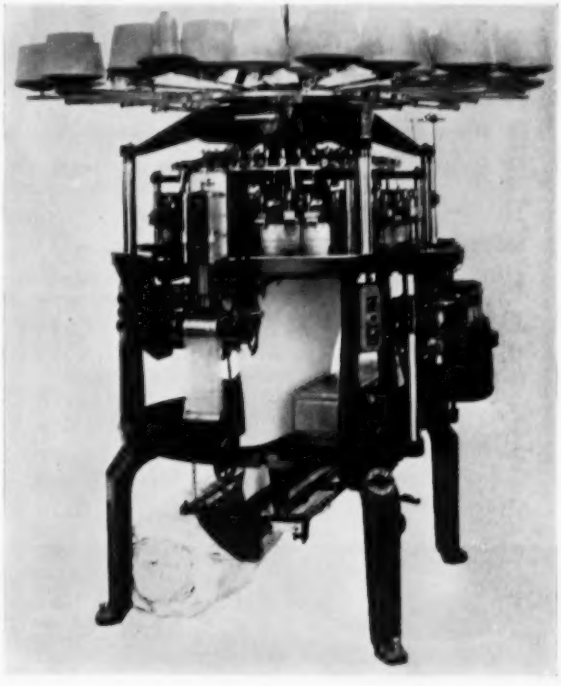
Do you want more data? Write ◂ or use card on page 173; list 6-101

High production interlock knitter

The Model "AI" circular interlock 32" diameter machine is a single-purpose machine (with 32 feeds in the body, 16 feeds in the cuff) capable of high production of 1 x 1 cuff with draw thread and interlock body.

The 32" diameter produces a larger and more flexible piece of true interlock cloth (needle over needle). This model is available in cuts up to and including 16½ cuts per inch, and finer cuts may be obtained if desired.

Its dogless construction eliminates interference with



ON THE BEAM WITH CELANESE

Celanese has a tremendous range of tricot and weaving beams to save you an entire operation, production space, and machinery investment.

TRICOT BEAMS

14″ Flange x 42″ long.	Primarily for shorter length patterns.
14″ Flange x 84″ long.	Primarily for shorter length—less flanges for better efficiency and quality in knitting.
21″ Flange x 42″ long.	Longer yardage beams.
21″ Flange x 84″ long.	Longer yardage beams—less flanges for better efficiency and quality in knitting.

45, 55, 75, 100, 120, 150 deniers.
Plain or pattern beams. Straight or ratio yardage.

For further information, write
Celanese Corporation of America, Textile Division, Charlotte, N. C.

WEAVING BEAMS

30″ x 54″	All deniers—55 through 3000.
36″ x 54″	Lengths to be supplied can vary according to set constructions and denier.
30″ x 66″	36″ x 54″ used advantageously for extra long lengths.
	30″ x 66″ used advantageously for wide fabric construction using high end count per beam.

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District Offices	180 Madison Ave.	New York 16, N. Y.
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WARREN, OHIO

cloth passage; and automatic stitch controls on cuff feeds permit different length stitches in cuff and body. Complete bodies with cuffs are knit consecutively and are easily separated by means of a nylon draw thread independent of the body yarn.

The vertical two-speed motor drive with jogging features, complete automatic oiling system, and convenient dial and cylinder section removal are incorporated in this machine.

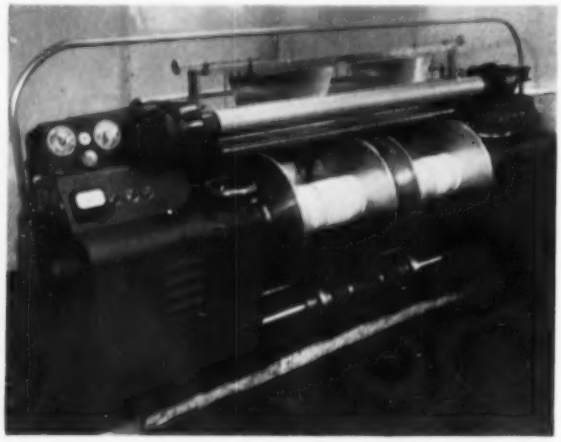
Wildman Jacquard Co., 1210 Stanbridge St., Norristown, Pa.

Do you want more data? Write ◂ or use card on page 173; list G-102

Multiple beam tricot warper

A new multi-purpose warper, Model MB-50, will accommodate two 14" or 21" beams or one beam up to 50" wide.

Among the many features of the warper—which is built on a completely machined, rigid, cast iron base and operates at speeds up to 600 ypm—are these: (1) push button doffing of all beams; (2) brakes on both sides of spindles; (3) presser roll guided by rack and pinion



assures accurate alignment with beam regardless of loading pressure; (4) changeover time to different beams approximately 45 minutes; (5) accurate speed control regardless of beam diameter with no special attachments required; (6) all lubrication points brought or piped to panel in front of machine; (7) machine is completely guarded; and (8) pneumatically operated accumulator rolls and individual roll drop, assuring least variation in tension windback; warper is backed electrically to eliminate undue tension on warp instead of pulling beam backwards with accumulator rolls.

Cocker Machine and Foundry Co., Gastonia, N. C.

Do you want more data? Write ◂ or use card on page 173; list G-103

Narrow fabric loom length standardized

At the request of the weaving industry, a narrow fabric loom builder has standardized the length of the firm's looms. Except for special orders, the new loom length will be nine feet.

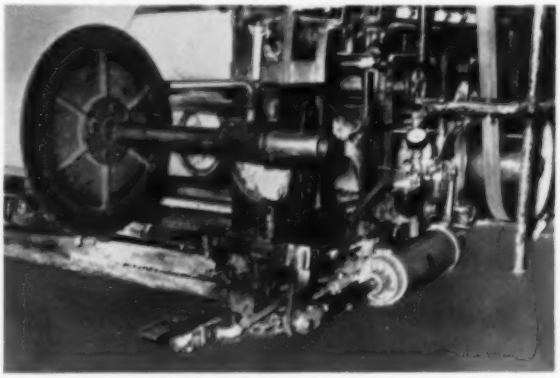
By thus standardizing the looms and their parts, the builder feels that the weavers will be able to reduce parts inventory, standardize maintenance, lower maintenance costs, and reduce the costs of housekeeping.

Fletcher Works, Inc., 2nd and Glenwood Ave., Philadelphia 24, Pa.

Do you want more data? Write ◂ or use card on page 173; list G-104

Slasher presser roll system ups output

A Pneumatic Presser Roll Control System, through air cylinders, creates even pressure on every strand of yarn as the beam is being built at the slasher, and allows an



increased production of from 15% to 35%. The device is also applicable for warper systems.

Fast automatic raising and lowering of the presser rolls provides faster doffing time. The pressure may be adjusted to accommodate a variety of yarns.

Livingston & Haven, Inc., Charleston, S. C.

Do you want more data? Write ◂ or use card on page 173; list G-105

Draft apron gives longer service life

A longer-lasting drafting apron that is more flexible and repels lint and loose fibers, Dayco AP 664, has a drafting surface of light blue "satin finish" and a semi-gloss inner surface of pink.

The exterior surface is effective in repelling loose fibers. The interior permits easier sliding over draft cradle nose bars and eliminates chatter and drag.

The apron is impervious to static, is resistant to processing oils, sunlight and general weathering, and offers increased flexibility at no sacrifice of strength.

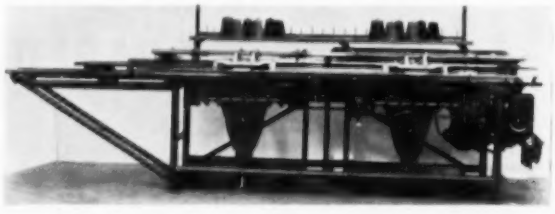
The Dayton Rubber Co., Dayton, Ohio.

Do you want more data? Write ◂ or use card on page 173; list G-106

Flat knitter features automatic doubling

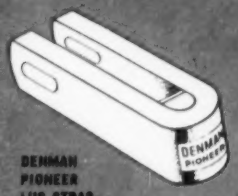
The Dubied Type DRB automatic flat knitting machine is particularly well suited for the production of rib-bottoms and cuffs used in the full-fashioned trade, and also for the knitting of plain or fancy collars and trims. It provides high production with a minimum loss of floor space.

Among the principal features of the machine are two coupled double-lock carriages working each over 36"



of needlebed space; the possibility of selecting either the high or the low butt needle for the knitting; stitch transfer from front to rear or from rear to front; and a two-speed attachment and two-speed motor for the

DENMAN PIONEER DROP BOX REVERSIBLE PICKER



DENMAN PIONEER LUG STRAP

DENMAN PIONEER SWEEPSTICK

DENMAN PIONEER HOLD-UP STRAP

DENMAN PIONEER SPINDLE ROD BUMPER

DENMAN PIONEER BOLL PICKER

DENMAN PIONEER BOBBIN STRIPPER BLADE

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Denman

PIONEER LOOM PARTS

Compounded For Smooth, Dependable Performance . . .

Longer Life And Greater Resistance To Shock!

DENMAN PIONEER LOOP PICKER

For more than 20 years Original Denman Pioneer Loom Parts have set new standards for smooth, dependable performance. They are scientifically designed and moulded to absorb repeated loom shocks with little or no adjustment . . . need replacement only after longer-than-average service. To cut costs, step up production, specify Original Denman Pioneer Loom Parts . . . they are built for rugged use and a longer "prime of life"!

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JOHN P. NORMAN, P.O. Box 445, West Point, Ga.

DAVE SELLARS, Drawer 1319, Greensboro, N.C.

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TEXPLANT CORPORATION, 695 Summer Street, Stamford, Conn.

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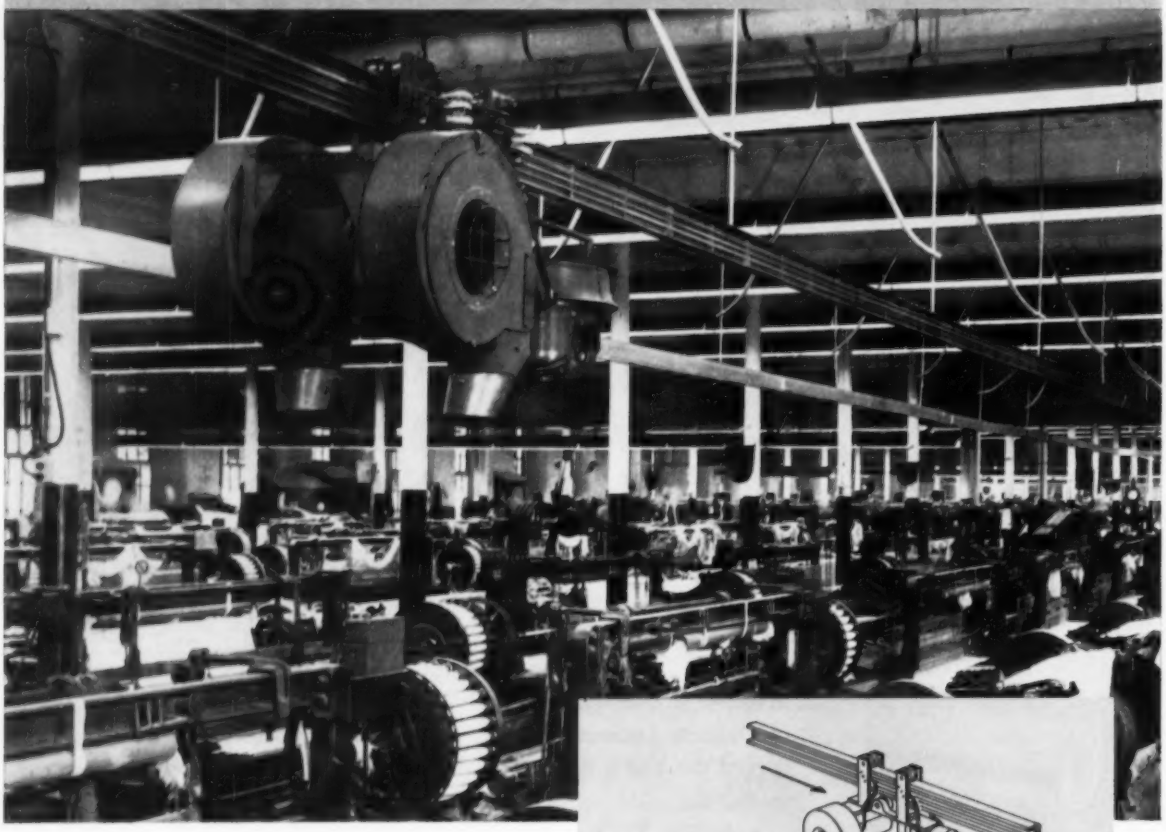
Amco Introduces it's New

Heliclone Loom Cleaner



Provides automatic, continuous cleaning of looms and ceiling • Drastically cuts cleaning costs • Steps up production • Improves quality of fabric • Reduces fire hazard • Improves weave room appearance • Boosts employee morale • Can be incorporated with beam handling equipment.

Write for further information, or ask to have an Amco engineer call.

Swiftly whirling outlet nozzles, driven by the air stream, direct the air jets at an acute angle in overlapping, circular paths. The result is a rapid series of high-velocity bursts of air over loom and warp surfaces for complete cleaning action.

AMERICAN MOISTENING COMPANY *Air Conditioning Systems and Textile Mill Equipment*

Executive Offices: Cleveland, N. C. Branches in Atlanta, Boston, Camden, Providence, Toronto

knitting of the loose course or for the transfer operation.

The machine performs automatic doubling of stitches in ribs for F-F garments. Up to 50% of the time used for topping is thus saved. The number of stitches which have to be doubled is determined by a set-up of high and low butt needles. Stitch transfer may be made in the same stitch tension as the rib itself is knitted.

Dubied Machinery Co., 21-31 46th Ave., Long Island City 1, N. Y.

Do you want more data? Write or use card on page 173; list G-107

2-in-1 thread trimmer

A machine known as the Dual-Purpose Clip-Matic thread trimmer cuts tapes, straps, loops and regular threads at the same time. It features a cutting head that combines the thread trimming operation with the cutting of tapes, straps, etc. Only one blade is required for both cutting actions.

The upper part of the blade cuts the bindings, straps, etc.; and the lower part trims the regular threads quickly and accurately. There is no need to change over from one side to the other, or to use separate blades for each process.

Also cited as features of the trimmer are an automatic suction control regulator for increasing and decreasing the pressure for various types of fabrics; 17 different nose pieces which can be adapted to almost any operation; and three types of blades made specifically to cut threads with built-in cooling system to prevent breakage of teeth.

Cutting Room Appliances Corp., 1134 Broadway, New York 10, N. Y.

Do you want more data? Write or use card on page 173; list G-108

Loom pattern chains of nylon need no oil

Nylon pattern chains for dobby heads on automatic looms reduce the chain weight for a given pattern by 66%.

Other advantages the nylon offers are: minimizes friction and wear on links, risers, and sinkers; requires no lubrication; maintains dimensional stability of all chain components; eliminates skips and smashes; simplifies handling during pattern changing; permits the use of colored risers for setting up pattern; improves quality; and increases production.

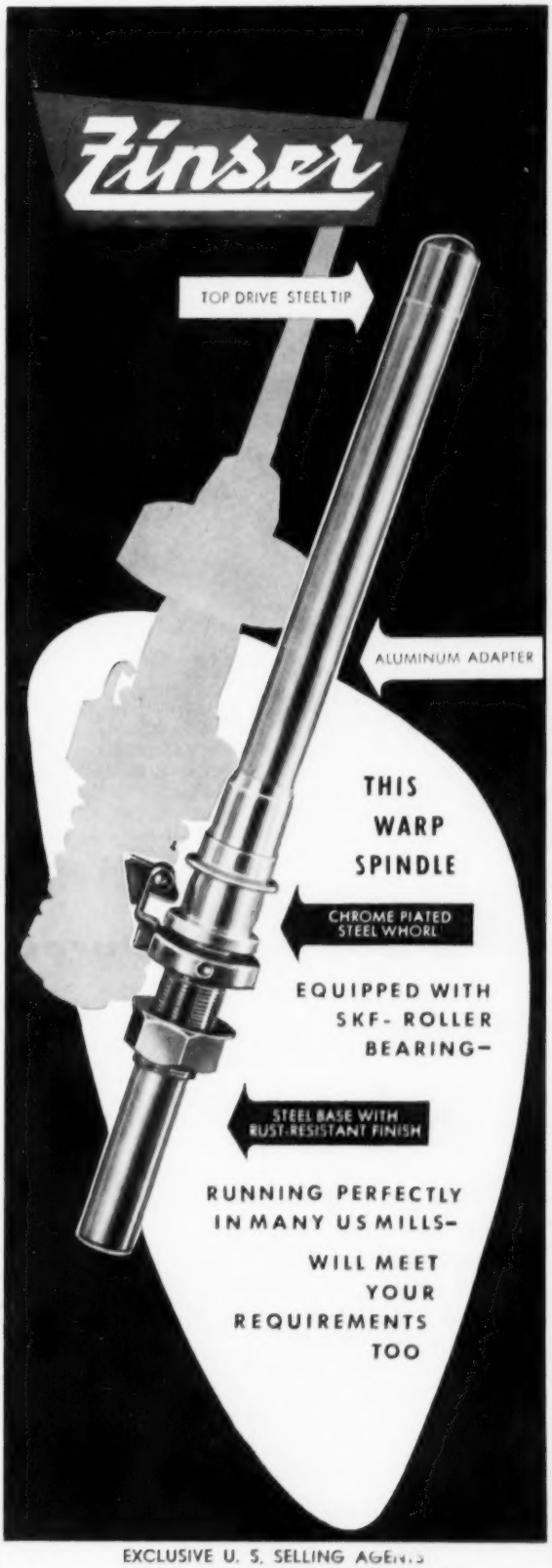
H. F. Livermore Corp., Boston 34, Mass.

Do you want more data? Write or use card on page 173; list G-109

Stores in-range fabric automatically

A storage unit for fabric in process automatically stores a given number of yards of fabric in a processing range, automatically taking in or releasing fabric as the fabric tension between adjacent machines decreases or increases. In addition, the Storage Compensator stores a sufficient yardage to allow stopping one of the processing machines between which it is positioned without stopping the other machine.

It automatically maintains a preset fabric tension be-



EXCLUSIVE U. S. SELLING AGENTS
WATSON & DESMOND
P. O. BOX 1954 CHARLOTTE, N. C.

tween the processing machines, and by removable weights, allows adjustment to be made of the actual tension present in the fabric.

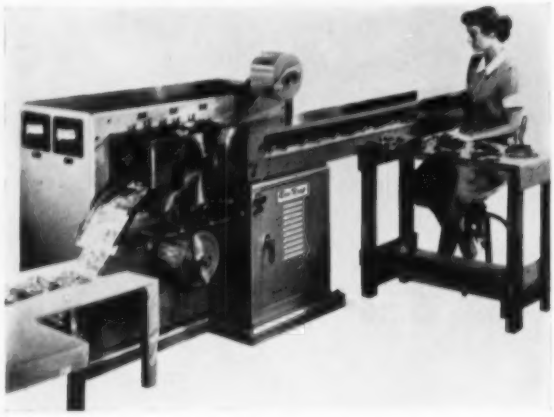
Birch Bros., Inc., 32 Kent St., Somerville 43, Mass.

Do you want more data? Write ◆ or use card on page 173; list G-110

Automatic soft goods packager

The Model "B" Roto Wrap Machine is a continuous heat sealing, automatic packaging machine. It makes, fills, and seals containers made from various types of flexible materials in a simple, high-speed operation.

Single and double track models are available in 6"



and 15" sizes. An output of 50-60 packages per minute, depending on type of packaging material, can be obtained.

No stiffener or backing is required for packaging, and more than one type of packaging material can be combined: for example, an aluminum foil backing and a cellophane front.

Items such as women's hosiery, sweaters, blouses, etc., are among examples of soft goods that can be readily packaged.

Conapac Corp., 120 E. 13th St., New York 3, N. Y.

Do you want more data? Write ◆ or use card on page 173; list G-111

Conversion systems for worsted spinning

A Long-Draft conversion system for Bradford and French worsted frames provides excellent fiber control.

On Bradford type spinning, the system permits much heavier roving with considerably less twist than is necessary for conventional spinning; higher drafts can be used. On French spinning, the mills can use a heavier roving and higher drafts after the change.

The changeover of Model FW3 spinning is accomplished in this manner: The three middle lines of rolls are removed and replaced with a double line of apron rolls, top and bottom. Cradles and double aprons are then installed on these rolls. A synthetic-covered top back roll replaces the self-weighted top back roll; and independent spring weighting is applied to the front, middle, and back top rolls.

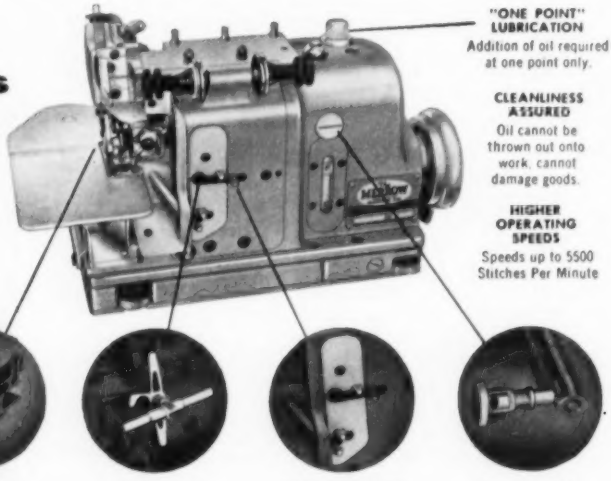
The conversion can be applied to several makes of Bradford spinning frames with even fewer parts than are needed for the French changeover. On the Bradford system the front and back top rolls are already spring-weighted. It is only necessary to apply top and bottom apron rolls, cradles, and apron together with the spring weighting for them.

When existing worsted spinning frames do not permit

Note These Outstanding Features of CLASS MERROW Machines

Featuring *AUTOMATIC LUBRICATION*

See why, for the widest variety of overstitching applications . . . on the broadest variety of knitted and woven materials . . . Merrow Class M Machines provide the most versatile, most reliable means of maintaining high volume, high quality production.


"ONE POINT" LUBRICATION
Addition of oil required at one point only.
CLEANLINESS ASSURED
Oil cannot be thrown out onto work, cannot damage goods.
HIGHER OPERATING SPEEDS
Speeds up to 5500 Stitches Per Minute
LEVELLING DEVICE ON FEED MECHANISM
Available on most models, permits delicate adjustment of feed dogs.
ROD TYPE FRAME CAP
Typical of simplified and improved mechanism throughout.
EASY THREADING
Ready accessibility means less time threading, more time operating.
TWIN PUMPS
Provide continuous oil return, assure proper lubrication at any speed. No wicks to dry out or harden.

"Merrow Class M Machines" illustrates advanced engineering features, provides application information. "Class M Machines for Use on Knitted Outerwear and Underwear" details many common applications.

TRADE MARK REG

The MERROW MACHINE COMPANY

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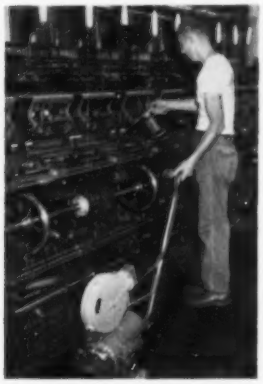
the preceding changeovers, a third system is available which necessitates the replacement of the drafting system above the roller beam. This operation includes the installation of roll stands, rolls, cradles, aprons, over-arm weighting and draft change.

Whitin Machine Works, Whitinsville, Mass.

Do you want more data? Write ◆ or use card on page 173; list G-112

Flushes and oils sinkerheads and catchbar

The Reading Portable Jet Flushing Device forces a stream of moisture-free needle oil into and through full-fashioned machine sinkerheads to keep the slots flushed free of foreign material and properly lubricated, and to lubricate the catchbar as well. Less than a minute is required to spray the entire machine; and although the device is designed primarily for full-fashioned machines, it has been found very satisfactory for lubrication of circular machines.



The equipment consists of a standard portable air compressor and cart with a suitable spray gun. It is designed to do its job quickly, efficiently, and economically.

A compressor produces a constant pressure of approximately 35 psi which is directed through a spray gun to force a steady stream of moisture-free needle oil into and through the sinkerhead.

A 50' extension cord from an automatic reel on the flushing device is plugged into a receptacle on the end frame of the knitting machine. The cord automatically unreels as the cart is pulled by the knitter moving along the length of the machine. The unit can be obtained with either a 115-volt or a 220-volt motor.

Textile Machine Works, Reading, Pa.

Do you want more data? Write ◆ or use card on page 173; list G-113

Anodized aluminum take-up

An aluminum take-up bobbin features aluminum barrel and heads brazed together and anodized against corrosion. The result is a strong, single unit without joints, cracks, or crevices where yarn can be trapped.

The 3/16" aluminum gives a strength superior to comparable bobbins of other materials produced by other construction methods.

Allentown Bobbin Works, Inc., Allentown, Pa.

Do you want more data? Write ◆ or use card on page 173; list G-114

Tension device for low-twist yarns

An adjustable constant tension device called "Pat-Tend," is now available for use on all types of yarns and packages. Units may be used in redrawing, quilling, warping, or at any time there is a need or desire for constant tension on the strand of yarn.

Main features are: It is adjustable to run zero- and low-twist yarn in that upon entering the device, the tension is applied gently, and as the yarn moves

EVER-READY Water Supply

for fire protection and general needs

• For three generations COLE has been supplying the textile industry with tanks they could *depend* on, from the conventional elevated tank to the modern type of ground-level reservoir shown above.

In COLE tanks, the water is ready to flow, under dependable gravity pressure, at any hour of the day or night.

Take advantage of our 103 years of specialized knowledge and experience in tank construction. Send us your inquiries for tanks from 5,000 to 2,000,000 gallons—stating capacity, height to bottom and location. Write for *Tank Talks.*

R. D. COLE MANUFACTURING CO. COLE NEWNAN, GEORGIA

Elevated Tanks, Pressure Vessels, Chemical and Processing Equipment from Aluminum, Stainless and Carbon Steel, Monel and Other Alloys.

Established 1854

R. D. COLE MANUFACTURING CO.
NEWNAN, GEORGIA

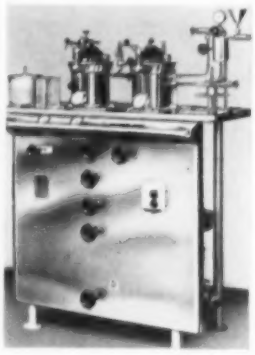
farther into the device, each step applies a slight increase in tension on the yarn. Designed primarily for synthetic yarns, it is easy to load and cannot unload in any position.

Heany Industrial Ceramics Corp., New Haven 3, Conn.

Do you want more data? Write ◆ or use card on page 173; list G-115

High-temperature lab dyeing machines

Scholl high-temperature laboratory dyeing machines, especially designed for dye experimentation and research, are available through a supplier in the United States. The machines are exactly proportioned to full-size production machines. By pretesting with these machines, dyers can carry out subsequent, full-scale dyeing without stopping for changes or corrections.



In this equipment, dyeing can begin above or below the boiling point and be carried out with or without pressure. Dyestuffs and chemicals can be added, and samples taken at any time, without interrupting the dyeing cycle—even during high-temperature dyeing. By means of the overflow and reserve tank a new bath can be prepared while dyeing is continued in the main pressure kier.

A window permits constant observation of the liquid within the machine. All units are constructed of stainless steel.

Cosa Corp., 405 Lexington Ave., New York 17, N. Y.

Do you want more data? Write ◆ or use card on page 173; list G-116

Set this pick motion power as loom runs

The Waldorf Electro-Mechanical Pick Motion equipment permits dial control of picking power and precise setting of the proper moment in the loom cycle for starting and stopping the picking action. All adjustments are made independently and while the loom is operating.

One driver unit is located beneath each end of the loom; a timer switch is coupled directly to the loom shaft. A tap-switch is mounted where it may be operated by the head motion.

Two high-inertia flywheels supply the energy to propel the shuttle. These wheels are driven continuously by the separate motors at each end of the loom. An electro-magnetic clutch couples the flywheel to the lug strap and picker stick at the time of the pick, and releases the connection when the pick is completed.

Control of the voltage to the electro-magnetic switch through the control panel controls the picking force. By the addition of simple switches it is possible to provide for "hard" and "soft" picks alternately for special applications.

A timer switch is mechanically coupled to the loom crank shaft. This switch determines the precise instant in the loom cycle when the picking action starts and

Ready!

Famous statue of Revolutionary Minute Man Concord, Mass.

DIAMOND FINISH Rings are in stock in standard sizes, ready to ship in a matter of hours.

Enjoy minute-man service on up-to-the-minute rings!

WHITINSVILLE (MASS.) SPINNING RING CO.

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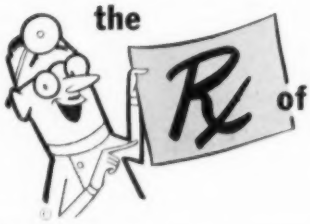
Makers of Spinning and Twister Rings since 1873

Rep. for the Carolinas & Va.: W. K. SHIRLEY, P.O. Box 406, Belmont, N. C. For Ala., Ga., & Tenn.: P. C. EVERETT, 369 Meadowbrook Dr. NE, Atlanta

Moretex

the Rx of Chemicals



Purity Like a doctor's prescription, Moretex Chemicals are held to rigid standards of purity. Moretex Polyethylenes for instance contain none of the waxes commonly added to cheaper products. Many Moretex products are made in several grades but in every case the ingredients and limitations are clearly specified.

Equipment Moretex Chemicals are compounded in modern precision equipment in which all processes can be accurately controlled.

For exact results as you want them, standardize on Moretex Products.

MORETEX Chemical Products, INC.

ESTABLISHED 1908

MANUFACTURING CHEMISTS SPARTANBURG, SOUTH CAROLINA

stops by making and breaking the circuit to the clutch. With the switch mounted on the crank shaft, all adjustments are made with reference to shaft position. Where multiple shuttles are used, a tap switch is installed to determine the order in which the two driver units are to be activated. The conventional box motion control in the loom head motion operates the tap switch, and thus relates its action to the loom cycle. For details of the motion in action, see TI for June, 1957, p. 140.

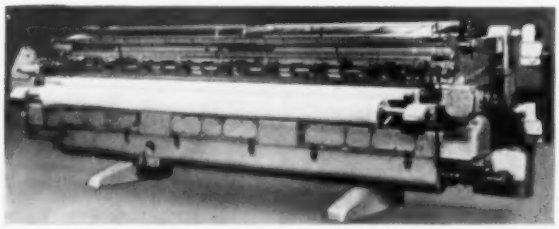
Waldorf Instrument Co., division of F. C. Huyck & Sons, Huntington Station, N. Y.

Do you want more data? Write ◂ or use card on page 173; list G-117

168" tricot machine knits 1000 cpm

A 168" tricot machine is designed to maintain a continuous knitting speed of 1,000 cpm on a wide variety of fabrics. As examples, a 60 den. nylon sheeting, back 1.0, 3.4, front 1.2, 1.0, is knitted at an average output of 26 yph; a 30 den. nylon Locknit, back 1.0, 1.2, front 2.3, 1.0, at an average of 28 yph.

Double eccentric crank shafts instead of cams give it a vibrationless and quiet performance. It also features a tubular needle. An adjustable sinker stroke which



makes setting of machine for different qualities simpler; and an electrical positive let-off results in a pre-determined and constantly maintained yield.

For maximum rigidity a high grade cast iron bed has been adopted, of box construction, and having internal stiffeners at intervals along its length. It is suspended as a cantilever forward from substantial cast-iron feet which are so positioned as to afford the minimum of deflection to the operating mechanism. These also permit ease of installation and a reduction in foundation preparation.

A second, or auxiliary box beam, is carried off the feet along the rear of the machine on which are mounted the beam columns. The general layout results in an effective constructional balance, permitting the use of relatively small, well-proportioned supporting members, and providing good, all-round accessibility.

Originally manufactured for U. S. markets by FNF Machinery Co., Ltd., Burton-on-Trent, England, the machines are now built and sold in the U. S. by a domestic firm.

Kidde Mfg. Co., Inc., 42 Farrand St., Bloomfield, N. J.

Do you want more data? Write ◂ or use card on page 173; list G-118

Screen print up to 10 colors automatically

An Italian-made automatic screen printing machine (the Comerio Ercole) is available to plants in the United States. The machine will print up to ten colors, and may be ordered to print any number of colors up to and including that figure.

The printer makes use of moving cloth which is positioned accurately under the squeegees for the application of one color, and is then advanced to the next squeegee

Order M&W TENTERETTES

A Small Tenter For Your Special Needs

M & W Tenterette: 30", 80" or 100" long, using our No. 12 tenter clip. We build to any maximum width, with either straight or hinged rails. Serves many uses.

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for the application of another color, etc.

The squeegee units themselves are individually motor-driven, and are adjustable along the length of the printer. Once positioned, they are locked in position by hand wheels. The transverse action of the squeegees is adjustable between 16" and 120" approximately.

The conveyor which carries the cloth is cleaned automatically once per cycle. The fabric is attached to this conveyor by being coated with a water-soluble adhesive and is pressed against the conveyor by a heated roll. This action holds the cloth in intimate contact with the conveyor during the printing cycle. It is this adhesive which is cleaned from the conveyor after the cloth is removed at the dryer by a roller covered with card fillet.

The dryer uses hot air to effect water removal from the cloth. The air is directed against both sides of the fabric which is guided by stainless steel rolls inside the dryer.

Elmo International, P. O. Box 222, Woodcliff Station, North Bergen, N. J.

Do you want more data? Write ◆ or use card on page 173; list G-119

Large-package twister handles all yarns

The Master Duplex Doubler-Twister makes a 5-lb taper-top package. Equipped with 6" rings, the twister has a 9" traverse on the bottle bobbin, or a 10½" traverse on double-tapered tubes. Built with 72 spindles mounted 9" center-to-center, the machine is 20' wide at the floor. The model can handle all yarn sizes and types; and can package novelty yarns of unlimited varieties.

Fletcher Works, Inc., 2nd and Glenwood Ave., Philadelphia, Pa.

Do you want more data? Write ◆ or use card on page 173; list G-120

Preboarder steams without pressure

The Model H320 boarding and preboarding machine applies steam without pressure which gives a softer and better finish to goods processed on the unit. The better finish is imparted to cotton, wool, nylon, and other synthetics.,

Other advantages of this machine include high speed operation, uniformity of treatment, elimination of wetting out and tumbling of ingrain styles. Rapid interchangeability of forms, either singly or in units of 16, is featured.

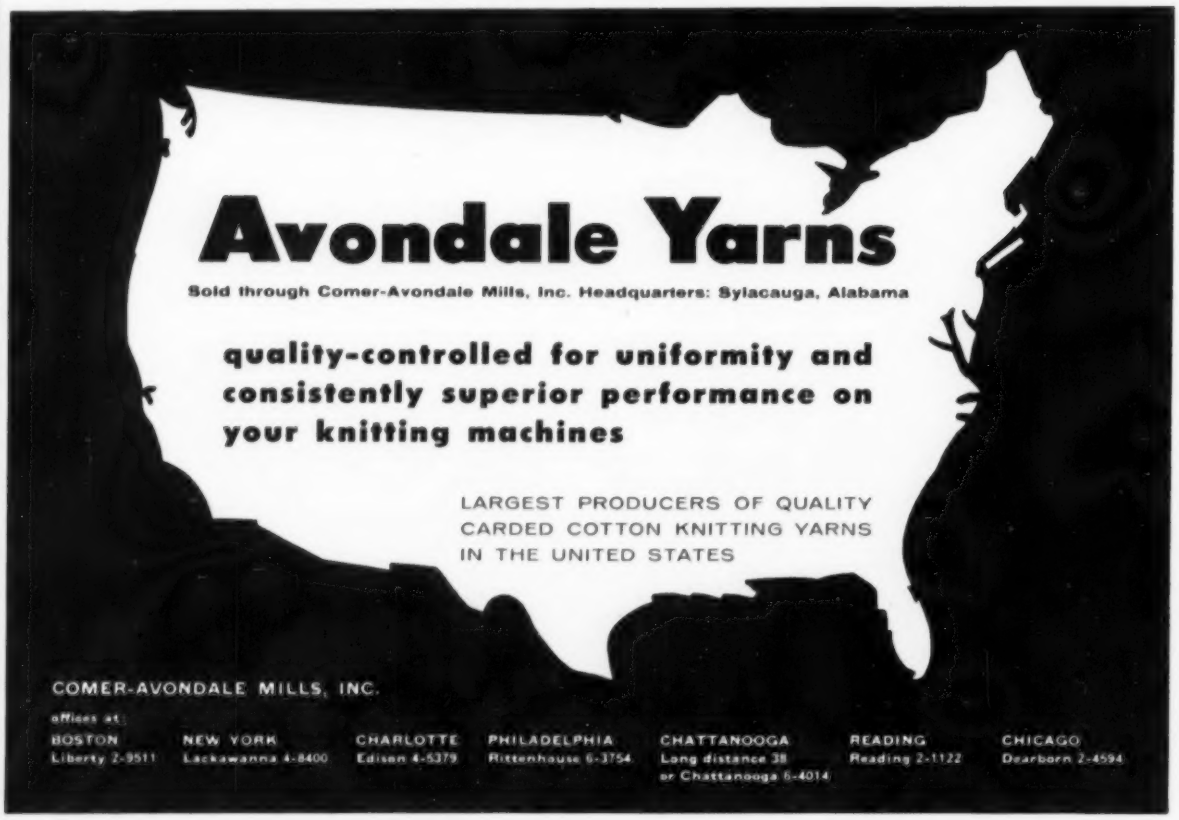
Manufactured by Heliot of Troyes, France, the machine has a compact form arrangement for high production by eliminating unnecessary movements in handling. The design permits rapid stripping of several socks at a time. Minimum space requirements are less than 5' x 5'.

Specialty Manufacturers and Sales Co., P. O. Box 235, Acworth, Ga.

Do you want more data? Write ◆ or use card on page 173; list G-121

Wet strength 70% over conventional rayons

A high-strength staple fiber, Avisco XL, which produces yarns 70% stronger in the wet state and 40% stronger in the dry-conditioned state than conventional rayons is available in limited commercial quantities for


Avondale Yarns
Sold through Comer-Avondale Mills, Inc. Headquarters: Sylacauga, Alabama
quality-controlled for uniformity and consistently superior performance on your knitting machines
LARGEST PRODUCERS OF QUALITY CARDED COTTON KNITTING YARNS IN THE UNITED STATES
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CHATTANOOGA Long distance 38 or Chattanooga 6-4014
READING Reading 2-1122
CHICAGO Dearborn 2-4594

selected end uses.

In comparable weave and construction, fabrics made of the staple have 25% more breaking strength, and 33% more tear strength than cotton, a fact which predicts greater serviceability in industrial ducks, tarpaulins and similar fabrics. The fiber is compatible with the acrylics and polyesters for blends.

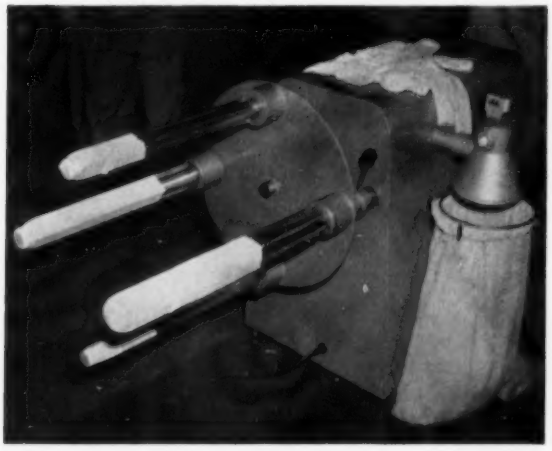
American Viscose Corp., 1617 Pennsylvania Blvd., Philadelphia 3, Pa.

Do you want more data? Write ◆ or use card on page 173; list G-122

Versatile hosiery examining form

An examining form turns, counts, and bags all kinds of men's, women's, and children's hosiery (except F-F or seamless ladies' full-length hosiery). The machine works on the venturi system and has a reversing air system to permit inspecting inside and outside. The unit allows 100% inspection on four inspection forms and deposits the work in a bag after counting.

The hosiery is turned either before or after inspection.



Also, lint and loose threads are removed automatically. Good and bad work are segregated with accurate count. Semi-automatic change for turret mounted forms of various sizes is provided. The unit is designated the Marvel X examining form.

Operators are fatigued less by reducing manual motion in inspecting. Its compact design minimizes floor space requirements; and the machine is self-contained and may be moved about easily. A 50% reduction in inspecting personnel is effected, compared to inspecting on flat boards. The forms are custom-made to mill requirements.

Marvel Specialty Co., Inc., Paducah, Ky.

Do you want more data? Write ◆ or use card on page 173; list G-123

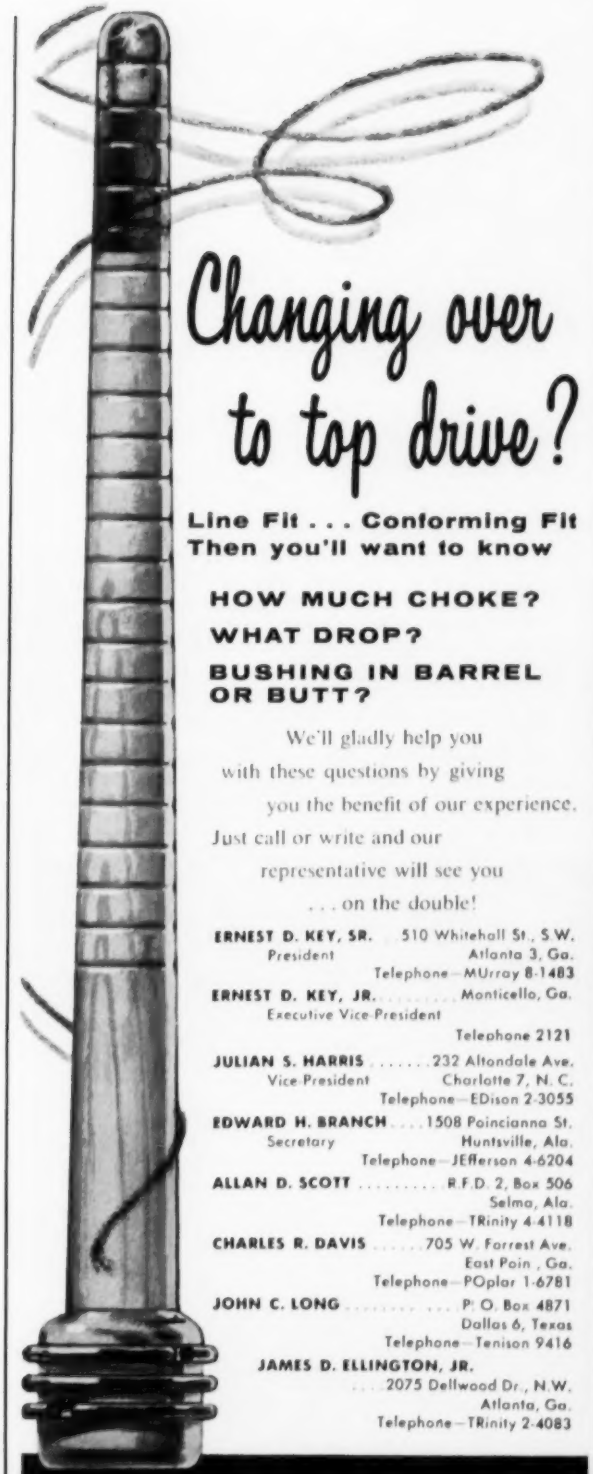
Napper with zero raise control

The Auto-Zero raising (napping) machine applies absolute control of zero raise in effecting cloth speeds up to 50 ypm. The machine is produced specifically for the cotton, woolen, and knit wear trades.

A tachometer registers the cloth speed, and electrically energized signals visually indicate the polarity of the napping action.

Tomlinsons (Rochdale) Ltd., Oldham Rd., Rochdale, England.

Do you want more data? Write ◆ or use card on page 173; list G-124



Changing over to top drive?

Line Fit . . . Conforming Fit
Then you'll want to know

HOW MUCH CHOKE?
WHAT DROP?
BUSHING IN BARREL OR BUTT?

We'll gladly help you with these questions by giving you the benefit of our experience. Just call or write and our representative will see you . . . on the double!

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ERNEST D. KEY, JR. Executive Vice-President — Monticello, Ga. Telephone 2121

JULIAN S. HARRIS Vice-President — 232 Altondale Ave. Charlotte 7, N. C. Telephone—EDison 2-3055

EDWARD H. BRANCH Secretary — 1508 Poincianna St. Huntsville, Ala. Telephone—JEfferson 4-6204

ALLAN D. SCOTT — R.F.D. 2, Box 506 Selma, Ala. Telephone—TRinity 4-4118

CHARLES R. DAVIS — 705 W. Forrest Ave. East Poin , Ga. Telephone—POplar 1-6781

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The ONLY manufacturer of Card Room Bobbins in the South

Equipment briefs

A hard ceramic trumpet for combers offers long life with unchanging inside diameters. The trumpets fit in place of existing ones.

Heany Industrial Ceramics Corp., New Haven 3, Conn.

Do you want more data? Write supplier or use card on page 173; list G-201

An industrial tractor equipped with an air-cooled engine, which develops 8.1 hp at 3000 rpm, delivers a drawbar pull of 750 lb. Designed for towing of interplant trailer trains and for the gathering of warehouse orders, the Tugster has a fully automatic drive which gives excellent "inching" qualities for precise control.

Hyster Co., 2902 N.E. Clackamas St., Portland 8, Ore.

Do you want more data? Write supplier or use card on page 173; list G-202

A variant of metallic yarns which closely approaches a round yarn is known as Faceted Lurex. Together with the operating advantages offered by its roundness, the yarn gives highlighted effects to fabric faces.

The Dobeckmun Co., 350 Fifth Ave., New York 1, N. Y.

Do you want more data? Write supplier or use card on page 173; list G-203

The safety solvent SS-25 is recommended for cleaning and degreasing electric motors, metal, machinery, electronic and electric components and equipment. It may be applied with a brush, spray or cloth, leaves no odor, is safe for human use, and is noncorrosive.

National Disinfectant Co., 2417 Commerce St., Dallas, Texas.

Do you want more data? Write supplier or use card on page 173; list G-204

A continuous-flow transfer applying machine, the Paramark Model 12, rolls transfers onto the material to be finished. A conveyor feeds the material between an iron which provides the heat and rollers which supply the pressure. The machines may be hooked in tandem where two transfers are needed.

Paramount Textile Machinery Co., 131 S. Wabash Ave., Chicago 3, Ill.

Do you want more data? Write supplier or use card on page 173; list G-205

An optical bleaching agent designed to produce brilliant, clear whites on Dacron is known as Tinopal E Liquid, and is recommended for almost all natural and synthetic fibers. It has good resistance to washing, atmospheric fading, pressing, perspiration acid, and alkaline spotting.

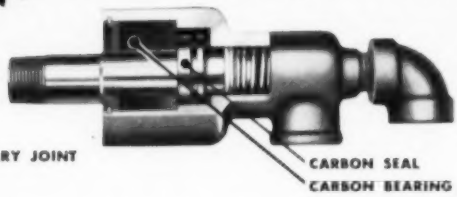
Geigy Dyestuffs, Div. of Geigy Chemical Corp., 89 Barclay St., New York 8, N. Y.

Do you want more data? Write supplier or use card on page 173; list G-206

A disposable plastic spool with a built-in ball bearing, the B.B.A., is designed to give the highest degree of ef-

SEALOL

CUT MAINTENANCE COSTS WITH CARBON as used in SEALOL Rotary Joints!!



- BALANCED PRESSURE principle employed
- SIMPLE, COMPACT, streamlined design
- LOW TORQUE means power savings
- LEAK-PROOF design protects fabrics
- AUTOMATIC TAKE-UP for normal wear
- BEARING CHOICE (carbon or ball)
- MINIMUM MAINTENANCE, self-lubricating
- TO 150 psi steam, 300 psi hydraulic

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SEALOL

THE BALANCED PRESSURE SEAL

ficiency in fabricating metallic yarns—the bearing makes it possible for the yarns to run right down to the barrel of the spool.

Metlon Corp., 432 Fourth Ave., New York 16, N. Y.

Do you want more data? Write supplier or use card on page 173; list G-207

A substantative softener, Dexene CS-15, for use with all fibers either as a self-softener or in resin finishes, is a cationic-nonionic agent which may be used either on the alkaline or acid side. It is compatible with a wide variety of thermo-setting and thermo-plastic resin formulations. Recommended as a napping assistant also.

Dexter Chemical Corp., 819 Edgewater Rd., New York 59, N. Y.

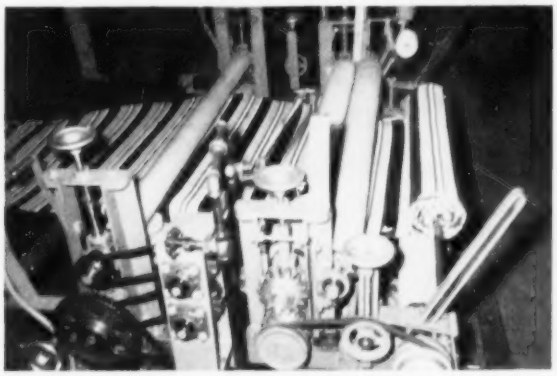
Do you want more data? Write supplier or use card on page 173; list G-208

Continuous flow blending and proportioning with high accuracy is provided by an electronic controller that may be located several thousand feet from the process. The desired percentage of the additive is set in on the "ratio" dial which effects the necessary control regardless of flow rate variations of the major component. The Blendtrol handles products such as oils, inhibitors, solvents, etc.

The Jordan Co., Inc., 3235 West Hampton Ave., Milwaukee 9, Wis.

Do you want more data? Write supplier or use card on page 173; list G-209

An overfeeding calender machine for rolling tubular knit goods will not distort or pull the wales. All types



of fabrics can be processed on it.

Edward S. Beard, P. O. Box 322, Spring City, Pa.

Do you want more data? Write supplier or use card on page 173; list G-210

A sulfonated oil recommended for the softening and finishing of cotton, rayon, and synthetic fabrics of various constructions, No-Odorol 1299-S, is highly resistant to discoloration and odor development. It may be used alone or with all the commonly used anionic and nonionic agents, starches, and gums in textile finishing formulas. In many cases it eliminates the need for rewetting agents on fabrics that are to be pre-shrunk. It enhances sewability and cutting, and is free from volatile oils.

American Cyanamid Co., Organic Chemicals Div., 3333 Wilkinson Blvd., Charlotte, N. C.

Do you want more data? Write supplier or use card on page 173; list G-211

Chemical resistant ductwork, light weight, and made of fiber glass reinforced plastic is recommended for use wherever any kind of ductwork is required. Available in various grades of chemical and flame resistant materials, Molded Fiber Glass ducts are fabricated to individual specifications.

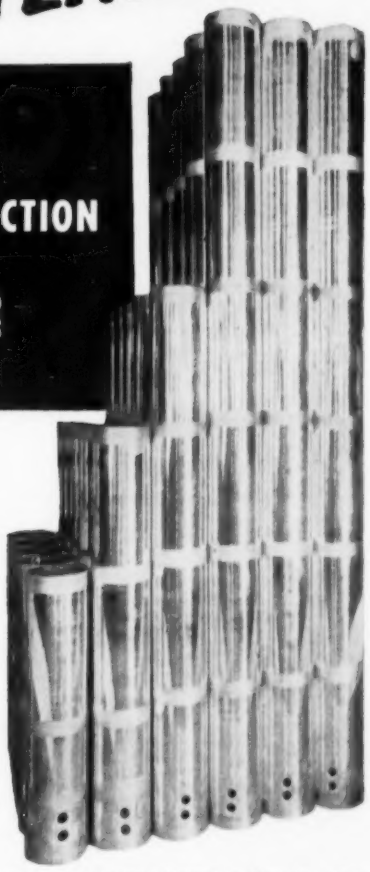
Molded Fiber Glass Sheet Co., 4304 Benefit Ave., Ashtabula, Ohio.

Do you want more data? Write supplier or use card on page 173; list G-212

Gastonia

Dynamically Balanced CYLINDERS

for MORE PRODUCTION at LOWER COST!



Scientifically tested GASTONIA Spinning, Twister, Spooler and Quiller Cylinders are dynamically balanced to assure top performance.

GASTONIA dynamically balanced Cylinders are precision-built for longer use in continuous, high-speed production of cottons, woolens, worsteds, synthetics and asbestos.

For the manufacture, repair or rebuilding of Cylinders to your specifications . . . call GASTONIA.

Years of skilled practical experience are precision-built into all GASTONIA products.

Gastonia TEXTILE SHEET METAL WORKS

Gastonia, North Carolina

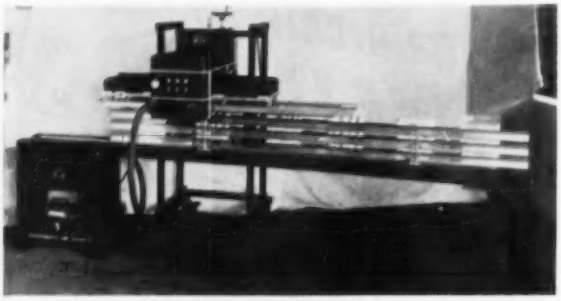
A sheet metal works serving textile mills

- Condenser screens
- Picker screens
- Waste Machine screens
- Card screens
- Cylinders
- Comber aspirators and dampers

COMBER RENEEDLING

Expert reneedling of combs for cottons, worsteds and synthetics.

Making edge seals automatically on polyethylene bags is the function of the Amscomatic 100, which will seal such bags at speeds up to 1000 linear inches per minute. The machine will operate on polyethylene bags up to



six mil gauge; is equipped with guides for manual operation when necessary; and is equipped with variable speed controls.

Amsco Packaging Machinery, Inc., 31-31 48th Ave., Long Island City 1, N. Y.

Do you want more data? Write supplier or use card on page 173; list G-213

A blue dyestuff of the developed type, Diazamine Blue BRG Conc., provides a blue which is desirably greener in shade on viscose. It discharges a pure white by alkaline and neutral discharge methods. Wash and light fastness are unusually high.

Sandoz Chemical Works, Inc., 61-63 Van Dam St., New York 13, N. Y.

Do you want more data? Write supplier or use card on page 173; list G-214

A trough solution for use in knitting of sized, unsized, and stretch yarns, Crystol, lubricates and controls wetting, reduces parts wear, and eliminates rust and deposits.

A second solution, Troftex, is custom-made after analysis of mill water. It lubricates all denier yarns, sized or unsized, and imparts a crisp, stiff finish to the knitted goods. Both solutions assist in keeping clean troughs.

Reading Testing Laboratories, Inc., Reading, Pa.

Do you want more data? Write supplier or use card on page 173; list G-215

More accurate oil feed control is featured in the newly improved Multiple Feed Oilers through the use of tapered feed adjustment screws which eliminate the need for conventional lock nuts. Adjustment is made by finger-tip force on friction screws which are slotted to permit fine adjustment. Filler cup is larger and permits easier refill from large containers. Available with manual or electric solenoid control, and with one to **24** outlets.

Trico Fuse Mfg. Co., 2948 N. 5th St., Milwaukee, Wis.

Do you want more data? Write supplier or use card on page 173; list G-216

Fugitive fluorescent colors applied to woolen yarns at low concentrations provide simple and positive identification. Goods treated with Arko Fluor Tints, when examined under ultraviolet light, show a characteristic shade such as blue, yellow, or yellow-green. Colors are readily removable from the woolen yarn by a light scouring operation.

Arkansas Co., Inc., Newark, N. J.

Do you want more data? Write supplier or use card on page 173; list G-217

A variable-speed electronic drive package consists of a rectified-power control panel, an operators' station, and a variable-speed motor drive. Called the VS Jr., the unit is a redesigned drive with its maximum size boosted from three to four hp. The drive gives wide-range adjustable

First

from BALTIMORE!

The FIRST TELEGRAPH LINE in the United States was established by Samuel Morse between Washington and Baltimore in 1844.

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— also from Baltimore...

YOUR *First* CHOICE IN BLACKS

- DIRECT
- ACID
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- ACETATE
- FORMALDEHYDE
- LOGWOOD

THE HOUSE OF BLACKS

Consult your local dyestuff distributors for information and samples. Shipments can be made from our Baltimore factory.

YOUNG ANILINE WORKS, INC.

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speed for all machine applications requiring precise control of variable speeds, including inching and jogging. Available in 220-and 440-volt models, beginning at ¾ hp, the drive give speeds from 23 rpm to 2300 rpm.

Reliance Electric and Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

Do you want more data? Write supplier or use card on page 173; list G-218

A cotton finish called Bradperma CMI offers a 100% "drip dry" feature and chlorine resistance to cotton fabrics for shirts, shorts, pajamas, uniforms, blouses, and white goods of all kinds. Bleaches and detergents may be used safely on cotton so finished without fear of the material turning yellow. The finish carries the Good Housekeeping seal.

Bradford Dyeing Association (USA), Bradford, R. I.

Do you want more data? Write supplier or use card on page 173; list G-219

A chain tool detaches ASA roller chains in seconds, with equal ease, whether on the bench or out in the field. A complete chain link is detached merely by placing the roller chain in the saddle and tightening a nut. There

is no distortion or damage to roller chain in the detaching process. Available in two sizes for 50# and 60# roller chains.

The Helix Corp., Crown Point, Ind.

Do you want more data? Write supplier or use card on page 173; list G-220

A yellow vat dye highly rated for fastness to light even in pastel shades is recommended for application by all methods. Called Yellow NGLR Paste Ultrasperse, the dye may be printed by the flash aging method, exhibits good all around fastness properties, and shows best results in pigment application.

Sandoz Chemical Works, Inc., 61-63 Van Dam St., New York 13, N. Y.

Do you want more data? Write supplier or use card on page 173; list G-221

An adhesive (rubber base type) for joining fabrics and other porous materials has instantaneous grab. The adhesive is strong enough to permit joining the ends of the material without overlapping. It has a tensile strength of 104 psi after 10 minutes, and 112 psi after 24 hours. It is not recommended for use where heat or solvents are present.

Adhesive Dept., Raybestos-Manhattan, Inc., Bridgeport 2, Conn.

Do you want more data? Write supplier or use card on page 173; list G-222

Sturdy glued-up boxes from flat printed blanks are made by the Boxmaster, which offers advantages in lowered box costs and a more attractive package. Users—among them are knitwear and other soft goods producers—get more durable boxes that have all the advantages of set-up boxes, and up to 90% reduction in the floor space required by set-up boxes.

United Shoe Machinery Corp., Boston 7, Mass.

Do you want more data? Write supplier or use card on page 173; list G-223

A brake motor especially designed for precision stop-

for the best in
CANVAS
doffer's boxes

LOOK FOR Lane

Specially designed for use with doffer's trucks, *only* this economical Lane Style 20 Doffer's Box incorporates *all* these quality features for *long, dependable service at very low cost:*

- Full-capacity body of Lane-woven duck—with deeply-embedded stitches.
- Light-weight, extra-strong spring-steel frame with rugged, flexible hardwood bottom.
- Rounded rivets prevent snags and wear at all points.

STANDARD DIMENSIONS:
26" long, 16" wide, 20" high

Lane canvas baskets, hampers, and trucks are *built to take it, built to last!*
Call for our representative. He's a specialist in adapting Lane baskets to your material handling problem. Write today.

Canvas Basket Craftsmen Since 1894
Lane
W. T. Lane & Bros., Inc., Poughkeepsie, New York

ping, braking overhauling loads, as a holding brake, a hoist brake, and to stop motor coasting between operations, is available in polyphase designs, 1800, 1200, and 900 rpm, and some slower and multispeed designs. In the Cle-Matic F Motor, solenoids and coils are eliminated. The magnetic field of the stator releases the brake when starting, and the permanent magnet applies the braking force when the current is turned off.

The Cleveland Electric Motor Co., 5213 Chester Ave., Cleveland 3, Ohio.

Do you want more data? Write supplier or use card on page 173; list G-224

A backing for carpets and automotive fabrics in the form of an acrylic resin, Resin CB, is fast to light and heat and extremely durable. The product requires no curing, does not crack or become brittle, and has excellent pigment binding properties. It can also be used to produce a variety of films, soft to hard.

Jersey State Chemical Co., 59 Lee Ave., Haledon, N. J.

Do you want more data? Write supplier or use card on page 173; list G-225

Two-piece aluminum jackets are precision-formed to fit snugly over insulated elbows and thus to give weather-tight protection. Called Aluminum Ell-Jackets, the fittings are manufactured for both 90-degree and 45-degree elbows and have factory-applied moisture barriers.

Childers Mfg. Co., P. O. Box 7467, Houston, Tex.

Do you want more data? Write supplier or use card on page 173; list G-226

A dyestuff for automotive and decorative fabric applications. Lumicrease Bordeau 3LR, possesses extremely good fastness to light, perspiration, and crocking. Wet fastness of the direct dye is good; and when aftertreated with resins, the color provides an even greater degree of wet fastness. Gives a perfect acetate reserve, and produces satisfactory unions on cotton/viscose blends.

Sandoz Chemical Works, Inc., 61-63 Van Dam St., New York 13, N. Y.

Do you want more data? Write supplier or use card on page 173; list G-227

An air compressor known as the "Channel-Flo" is a two-stage, 200 psig rated motor compressor available in 1½ and 2 hp sizes. Requiring less than half the amount of floor space needed for tank-mounted, belt-driven units of comparable size, it can be mounted on a shelf, side wall or overhead bracket with the air receiver mounted in an out-of-the-way space. Beltless, the compressor is flange-mounted directly on the driving motor.

Ingersoll-Rand Co., 11 Broadway, New York 4, N. Y.

Do you want more data? Write supplier or use card on page 173; list G-228

A finishing agent for worsted and woolen fabrics (or for blends of those fibers with synthetic fibers) has been designed for easy application to the final wet operation of the finishing department. The finish, known as Bradtone PE, is nonionic in nature which permits its use without concern for the compatibility with other finishing ingredients or any change in the dye shades. Brightens colors and assists in mechanical finishing of cloth—napping, etc. Readily dispersible in cold water, it imparts a finish which is resistant to washing, dry cleaning, and yellowing on ageing.

Original Bradford Soap Works, Inc., West Warwick, R. I.

Do you want more data? Write supplier or use card on page 173; list G-229

A 100% active nonionic detergent, Arctic Syntex 036, is

NEW! Here's a solvent cleaner just perfect for textile mills

It's Oakite 117 – a cold cleaning solvent that's custom-tailored for use on looms, twisters, reed parts and other textile equipment.

CLEANS FAST. Especially effective on combinations of lint, grease, oil and smut.

DRIES DOWN quickly and completely under air blow-off or wiping.

HIGH FLASH POINT. You get safety to spare.

And low cost adds a straight dollars-and-cents advantage to Oakite 117. Want more details? Write to Oakite Products, Inc., 26C Rector St., New York 6, N. Y.

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Johnson Joint with SYPHON ELBOW
3000 Series
ASSEMBLY PLATE — Holds internal parts in position when head is removed.
SELF-SUPPORTING — Needs no external supports of any kind.
SYPHON ELBOW — Permits use of straight pipe for syphon. Can be inserted or withdrawn right through the joint.

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on this Series 3000 Johnson Joint and the syphon elbow. Remember Johnson Joints have written an unmatched service record . . . are first choice among mill men and machinery makers alike . . . and can fit all operating needs.

The Johnson Corporation

815 Wood St., Three Rivers, Mich.

compatible with a variety of solvents and other chemicals, and as a result it is an ideal detergent for many industrial uses. Recommended for use in the textile, plastic, rug cleaning industries, etc., it can be used effectively wherever an economical and efficient wetting, penetrating, emulsifying, and cleaning agent is desired. It is not inactivated by acids, alkalis, or reducing agents, or by most organic ions.

Colgate-Palmolive Co., Industrial Sales Dept., 300 Park Ave., New York 22, N. Y.

Do you want more data? Write supplier or use card on page 173; list G-230

Extract dyed yarn packages without distortion. The Economy Package Extractor, designed to accommodate individual dye packages on pins set in a stainless steel

basket, extracts moisture without distorting the package. Several sizes are available.

Fletcher Works, Inc., 2nd and Glenwood Ave., Philadelphia 24, Pa.

Do you want more data? Write supplier or use card on page 173; list G-231

Taping large, bulky cartons or packages where long, strips of tape must be handled can be done quickly and accurately (and without messy fingers) with the Portable Roll-On Sealer. For use in fields where shipping cartons must be used—carpets, rugs, textiles, etc.—the machine moistens, applies, and cuts off the tape. Tape widths up to 3" can be used.

Pack-Rite Machines, Div. of Techtmann Industries, 407 E. Michigan St., Milwaukee, Wis.

Do you want more data? Write supplier or use card on page 173; list G-232

Level control, density and liquid interface detection, and flow failure detection are accomplished by the GammaSwitch which uses radiation as a detection medium. The switch requires no probes, floats, electrodes, or mechanical connections. The device is mounted completely externally, and it is not necessary to put holes through the vessel to which the switch is attached.

Isotope Developments, Ltd., Beenham Grange, Aldermaston Wharf, near Reading, Berkshire, England.

Do you want more data? Write supplier or use card on page 173; list G-233

A navy blue dye for wool, silk, and nylon imparts an attractive and bloomy navy blue. Called Navy Blue RL Conc., it builds evenly to a level shade with good yield through heavy depths, and requires no development or other aftertreatment to obtain its good light and washing fastness. Reservation of cellulosic and synthetic fibers other than nylon is generally good.

Ciba Co., Inc., 627 Greenwich St., New York 14, N. Y.

Do you want more data? Write supplier or use card on page 173; list G-234

A speed recorder which measures and records speed with an accuracy of plus or minus 0.1% of the measured speed, is designed for use with the manufacturer's d-c tachometer generators, and can be calibrated in rpm, fpm, or other similar units. A variation of the instrument records per cent deviation from a desired speed with

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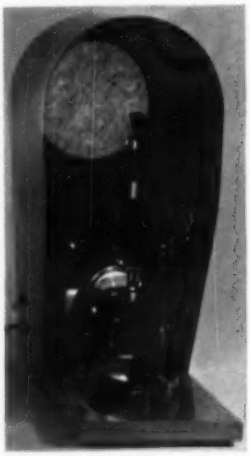
the same plus or minus 0.1%.

General Electric Co., Schnectady 5, N. Y.

Do you want more data? Write supplier or use card on page 173; list G-235

A microscope projector is designed to convert the ordinary type of microscope with a single eye-piece to use as a projection instrument. The image normally seen through the microscope is projected on a screen where it can be viewed by several people at once. The projected image can be examined with considerably more accuracy and with less eye fatigue than in the conventional manner.



Shirley Developments, Ltd., 40 King St. West, Manchester 3, England.

Do you want more data? Write supplier or use card on page 173; list G-236

A softener for sweater fabrics imparts an exceptionally soft and lofty hand to knit fabrics composed of acetate, Acrilan, nylon, Orlon, rayon, and wool. Besides the softening properties of this cationic finish, Softener O R has excellent resistance to yellowing under normal drying conditions.

Arkansas Co., Inc., Newark, N. J.

Do you want more data? Write supplier or use card on page 173; list G-237

An air preheater which is usually installed in the fire door of boilers, supplies preheated secondary air over the fire bed or burners for maximum combustion of the fuel—fuel savings up to 25% and a marked reduction in smoke and soot can be obtained. Called the Boston Air Preheater, the unit is designed for use with low- or high-pressure, oil-, coal-, or coke-fired boilers of the induced-draft, forced-draft, or steam-blast types.

The Preheater Corp. of America, 415 Lexington Ave., New York 17, N. Y.

Do you want more data? Write supplier or use card on page 173; list G-238

A retarder for use with the more dyeable Orlon is designed for application with the basic or cationic dyestuffs. It prevents too rapid exhaustion of the dyestuff and thereby prevents streaked or shaded lots. Called Depco Retarder N, it is a clear, amber liquid with excellent stability and solubility properties. The amounts required vary with the depth of shade wanted or the percentage of dyestuff used.

De Paul Chemical Co., Inc., 44-27 Purvis St., Long Island City 1, N. Y.

Do you want more data? Write supplier or use card on page 173; list G-239

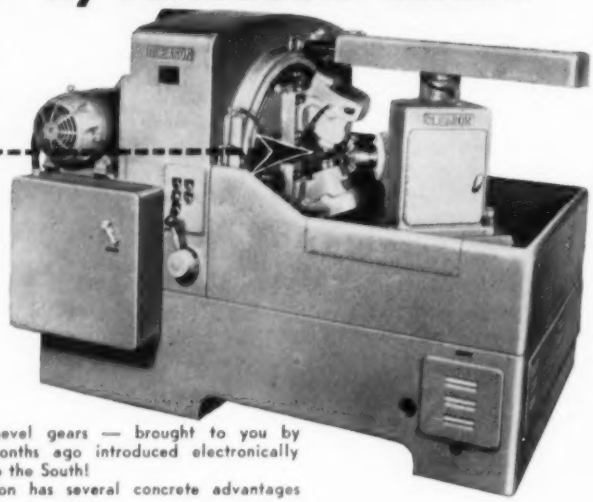
A redesigned sprinkler head (Model 38-B) is available for upright or pendent installations. The head gives a better distribution pattern over a wider area than was possible before, offering even better protection against fire.

Automatic Sprinkler Corp. of America, Youngstown 1, Ohio.

Do you want more data? Write supplier or use card on page 173; list G-240

Another "FIRST" for you—by FERGUSON GEAR!!

Straight Bevel "Coniflex" Gear Generators



Here is a giant stride in bevel gears — brought to you by Ferguson, who only a few months ago introduced electronically controlled heat-treated gears to the South!
Our new "Coniflex" installation has several concrete advantages for you:

1. Production of finer quality gears;
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3. Speeds up production and delivery;
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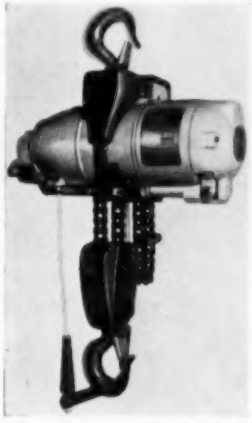
A heavy duty electric hammer weighing just 7½ lb is designed to simplify drilling, cutting, and chiseling problems. The tool will drill a ⅞" hole one inch deep in concrete in 30 seconds. Equipped with a quick-change chuck, it will handle its manufacturer's line of 40 different tools.

Modern Mfg. Co., Edgemont & Clementine Sts., Philadelphia, Pa.

Do you want more data? Write supplier or use card on page 173; list G-241

A 4000-lb air-powered hoist has a lifting speed which varies from a creep to 10 fpm at full load and 90 psig air line pressure. Length of lift is 8 ft. When the air supply fails or maximum lowering speed is exceeded, the brake design permits the operator to retain control of the hoist while lowering the load.



Gardner-Denver Co., Keller Tool Div., Grand Haven, Mich.

Do you want more data? Write supplier or use card on page 173; list G-242

Woolen and worsted reneedling service. A new service to the woolen and worsted trades in the form of a reneedling and refinishing service on wool combs, half laps, faller bars, gill box combs, roto drafter combs, and hackle combs is available for both domestic and imported machinery.

Gastonia Comber Needling Co., Gastonia, N. C.

Do you want more data? Write supplier or use card on page 173; list G-243

A sucrose crosslinking agent for use by textile processors and others is called Hyprose SP80. It is less volatile and less affected by atmospheric moisture changes than glycerine, and has less effect on lowering the tensile strength of cellulosic materials.

The Dow Chemical Co., Midland, Mich.

Do you want more data? Write supplier or use card on page 173; list G-244

New books

Management Accounting for Profit Control presents coordinated cost accounting and budgetary planning and control procedures which the company controller uses to guide management, from foreman to president, in decision-making. It emphasizes the relationship of the effects of income, cost, and capital on the profit of an enterprise. Techniques are presented for planning and controlling these three determinants of satisfactory profits, for reporting actuals in comparison with plans, and for analyzing and interpreting deviations from the plans. Available from McGraw-Hill Book Co., Inc., 330 West 42nd St., New York 36, N.Y. Price $7.00.

The instructions given in *Laboratory Glassblowing* will enable any reasonably dexterous person not only to repair broken glassware but also to make quite complicated glass apparatus. The equipment necessary for glassblowing and its operation are described in detail. The book contains well over a hundred illustrations to help the beginners to master the techniques in record time. Available from Chemical Publishing Co., Inc., 212 Fifth Ave., New York 10, N.Y. Price: $4.00.

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Wyandotte Caustic Soda is guaranteed to be the best rayon grade available—purer than most reagent grades! This top-quality caustic results from Wyandotte's modern production methods and quality control; rigid control of all raw materials. And when you include Wyandotte's economical shipping methods in your calculations, you have a caustic that just can't be beat!

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Whitin Pacemaker Twisters have established unsurpassed performance records for their high production, yarn quality, minimum maintenance and operating costs. For cotton and spun synthetic yarns, they are available in 3½" - 6" gauge with 2½" - 4½" rings and with traverses up to 11" depending on yarn and mill requirements. Their notable features are:

- Front bottom roll arrangement to provide a yarn path that is in almost vertical line from bottom of front roll to the guide.
- Laminated bakelite gears meshing with metal gears in the head end, for noise reduction and long wear.
- Spring counterbalanced ring rail.
- Spring weighted anti-friction tape tension pulleys.

ALSO AVAILABLE

- Steel pulleys on continuous drive shaft for spindle drive.
- Slotted ring rails for full length stationary separator blades.
- Stationary guide rod behind spindles for supporting ring rail traversing mechanism which prevents contamination of yarn when ends are down.
- Ball bearing or roller bearing spindles.

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FOR RICH, FULL SHADES ECONOMICALLY PRODUCED

Sweaters are a necessity in the wardrobes of the younger set. The more colorful, the better. With GDC's Genacryl* dyes, you can match the popular shades shown here or create trend-setting new ones on Orlon, other acrylics, and wool-acrylic mixtures.

Water-soluble Genacryl dyes, a new form of the basic type, are applied directly to the fabric in the presence of acetic acid without numerous complex procedures. Their high tinctorial strength makes possible economical production of bright, full shades that are level and well penetrated. These colors have very good fastness to light, dry-cleaning, perspiration, rubbing and washing.

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7-2 CARBANTHENE GREY BFN PASTE. Bulletin on 91 tests of this fast vat dye. Tech Bulletin 443, National Aniline Div., 40 Rector St., New York 6, N. Y.

7-3 LIQUID DETERGENT. Sample of Nacconol SL available on request. National Aniline Div., 40 Rector St., New York 6, New York.

7-4 STROBOTAC. Measures speed of rotating, reciprocating or other cyclic motions. General Radio Co., 275 Massachusetts Ave., Cambridge 39, Mass.

7-5 AIR FILTER CATCHES LINT. Tells how to provide lint free air for your mill. Bulletin 234, American Air Filter, 275 Central Ave., Louisville 8, Ky.

7-6 PREVENT DAMAGE TO CLOTH. Bulletin tells how to save with "Scotch" Brand pressure tape. Minnesota Mining & Mfg. Co., Dept. OU-67, St. Paul 6, Minn.

7-7 NEW DRYING SYSTEM. Engineered drying equipment for Tufted plants. Dalton Sheet Metal Co., Inc., Dalton, Ga.

7-8 DIAL-TYPE TUFTING MACHINE. Information on new machine which is a step toward automation in the tufted carpet industry. Super Tufter Machine Co., Inc., Fort Oglethorpe, Ga.

7-9 MATCHED V-BELTS. Details on V-Belts that stay matched from factory to drive. Goodyear, Industrial Products Div., Akron 16, Ohio.

7-10 KEEP KNITTING NEEDLES CLEAN. Crystoil removes crust or size build-up. Sinclair Refining Co., Tech. Service Div., 600 Fifth Ave., New York 20, N. Y.

7-11 NEW FINISHING ROLL. Reduces roll costs on standard or special applications. Dayton Rubber Co., Holfast Div., 1486 Lakewood Ave., Atlanta, Ga.

7-12 CARPET CORES, STORAGE TUBES. Literature on simplified storage and better cores for rugs. Sonoco Products Co., Hartsville, S. C.

7-13 PROFITABLE CURING. Complete story on profit-making loop curers and roller curers. Proctor & Schwartz, Inc., Seventh and Tabor Rd., Philadelphia 20, Pa.

7-14 LAMINATED CARPET COVERS. Complete information on Rol-Lap Carpet Covers with cemented seams. Bemis Bros. Bag Co., St. Louis 2, Missouri.

7-15 TUFTING YARNS. Yarn to your exact specifications. Also thread, jute, gray goods. J. L. Knight & Co., Dalton, Ga.

7-16 STAINLESS EQUIPMENT. Information on stainless products made to your order. Lucey Alloy Products Div., 1514 Chestnut St., Chattanooga, Tenn.

7-17 SAMPLE BINDERS. Little binders, big binders, special binders . . . samples and prices. J. M. Marbut Co., 419 Highland Ave., N.E., Atlanta 12, Ga.

7-18 CARPET DRYERS. Details, pictures, drawings on driven roll, conveyor and tenter types. Andrews and Goodrich Div., 336 Adams St., Boston (Dorchester) Mass.

7-19 DRYING TUMBLERS. Details on fast, efficient open-end tumblers. Huebsch Manufacturing Co., 3775 N. Holton St., Milwaukee 1, Wisconsin.

7-20 PIEDMONT PRODUCTS. Yarns for rug tufting or chenille, or carpet backing. Piedmont Cotton Mills, East Point, Ga.

7-21 BEDSPREAD TUFTER. Information on redesigned bedspread machine for regular bedspread yardage. Cobble Bros. Machine Co., Inc., Riverside Dr., Chattanooga, Tenn.

7-22 COMPLETE TUFTED SUPPLIES. How to get your tufting necessities with one telephone call. Fulton Bag and Cotton Mills, Atlanta, Ga.

7-23 APPLICATION OF FOAMGLAS. Set of six specifications for industrial use. Pittsburgh Corning Corp., One Gateway Center, Pittsburgh 22, Pa.

7-24 MOTORS AND DRIVES. Describes complete line of power and power transmission equipment. Reliance Electric and Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

7-25 MOYNO PUMPS. Describes principle that enables pumping of almost anything that will flow through a pipe. Robbins & Myers, Pump Div., Springfield, Ohio.

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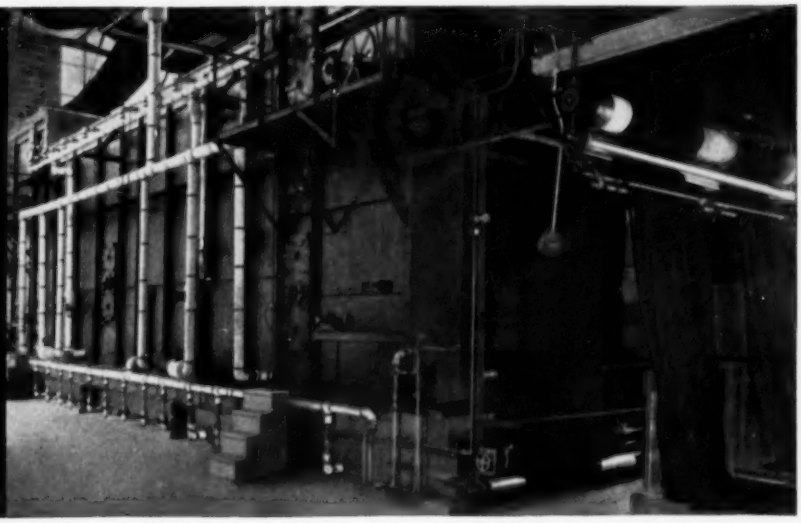

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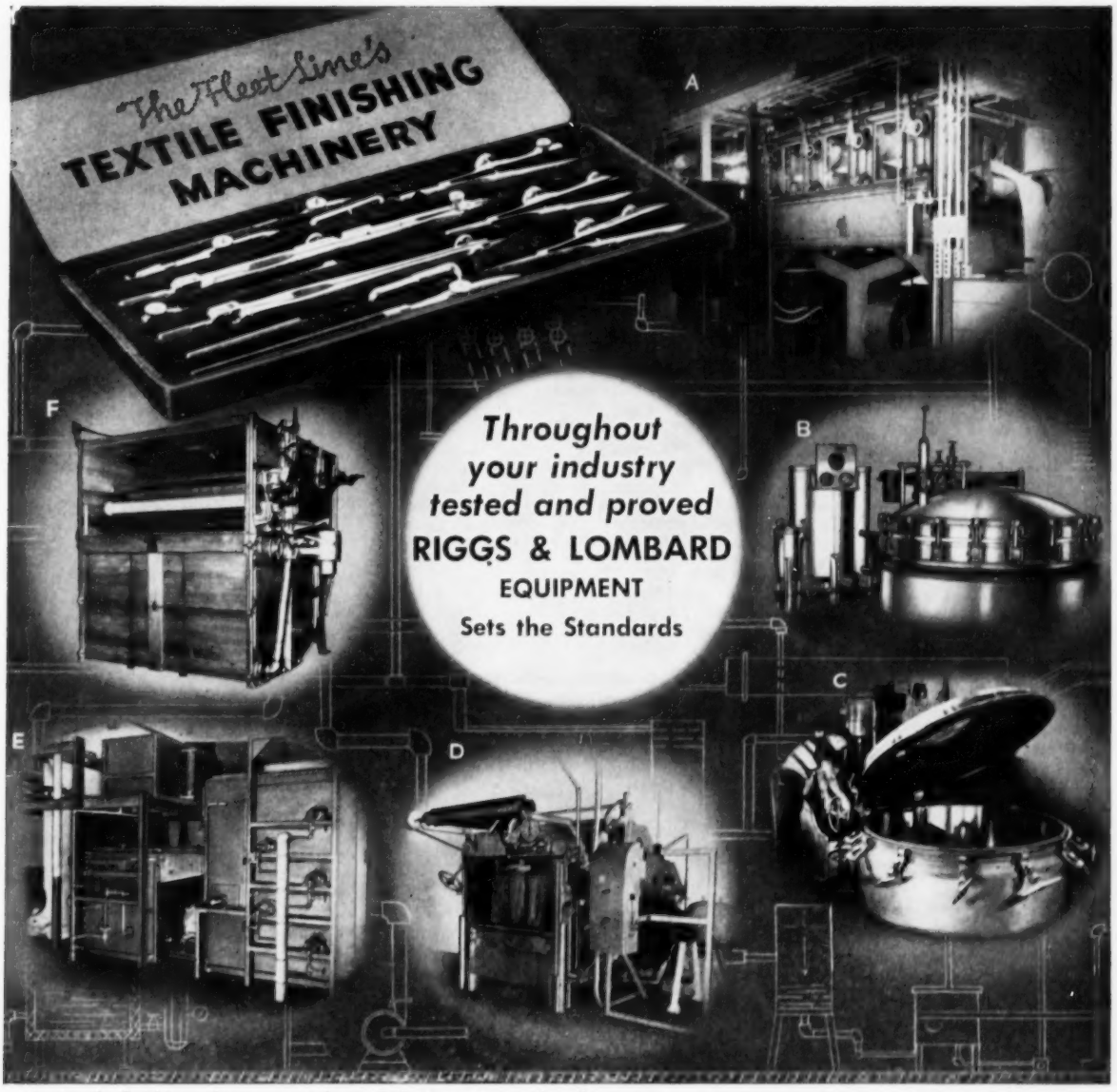

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R-439 Curing Oven — Details, pictures, and advantages of gas-fired oven. James Hunter Machine Co., North Adams, Mass.

R-440 Guiders And Tension Devices — Straight line guiding of open width goods. Mount Hope Machinery Co., 15 Fifth St., Taunton, Mass.

R-441 Processing Arnel Fabrics and Blends — Formulas for dyeing, printing, finishing and heat treating. Celanese Corp. of America, Textile Div., Marketing Dept., Box 1414, Charlotte, N. C.

R-442 Hycar Latices — Physical properties and typical fields of application. B. F. Goodrich Chemical Co., 324 Rose Bldg., Cleveland 15, Ohio.

R-443 Sodium Hydrosulfite — Literature and test samples are available on "T-C Hydro." Tennessee Corp., 617-629 Grant Bldg., Atlanta, Ga.

R-444 54% Or 70% Caustic — Chart helps decide most economical caustic for you. Wyandotte Chemical Corp., Dept. 565-T. Wyandotte, Mich.

R-445 New Finishing Rolls — Money-saving facts about long-wearing, quality rolls. The Dayton Rubber Co., Holfast Div., 1486 Lakewood Ave., Atlanta, Ga.

R-446 Ethanolamines — Lists application, chemical and physical properties. Nitrogen Division, Allied Chemical and Dye Corp., 40 Rector St., New York 6, New York.

R-447 Nappers For Treating Any Fabrics — Complete details on Muller Tri-Napping Machine. Franz Muller, Monchen-Gladbach, Germany.

R-448 Ball Bearing Turn Table — Describes 48-inch steel turn table for mills. Birch Brothers, Inc., 32 Kent St., Somerville, Mass.

R-449 Rotary Dyeing Machine — For use in dyeing hosiery, hats, gloves, socks, etc. Smith, Drum & Co., Allegheny Ave., at 5th St., Philadelphia 33, Pa.

R-452 Micro Switch For Wet Process — Advantages and applications in dyeing, bleaching, finishing. Micro Switch Div., Minneapolis-Honeywell Regulator Co., Freeport, Ill.

R-453 Complete Line Of Mathieson Chemicals — Covers organic, inorganic, specialty chemicals. Olin Mathieson Chemical Co., Industrial Chemicals Div., Baltimore 3, Md.

R-456 Dyeing and Finishing Machinery — Complete line presented in series of catalogs. Birch Brothers, Inc., 32 Kent St., Somerville 43, Mass.

R-457 Dyeing, Bleaching and Drying Equipment — Complete line for cotton, wool and synthetics described. Color pictures. Morton Machine Works, 1718 3rd Ave., Columbus, Ga.

R-458 Napthol Ratios Slide Chart — Quickly and accurately enables operators to determine Napthol Ratios. Alliance Color & Chemical Co., 33 Ave. P, Newark 5, New Jersey.

R-459 "PCB" Rock Salt — Tells how product saves money, eliminates bad dyeing. Morton Salt Co., Industrial Division, 120 So. LaSalle St., Chicago 3, Ill.

R-461 Wool Oils — Describes influence of wool oils in producing quality yarns and fabrics. Procter & Gamble Dist. Co., Gwynne Bldg., Cincinnati, Ohio.

R-462 Bleaching With Peroxygen Chemicals — Bleaching methods comprehensively treated. Becco Chemical Div., Food Machinery & Chemical Corp., Station B, Buffalo 7, New York,

R-464 Automatic Control System For Continuous Bleaching — How to control temperature, pressure and liquid level. Taylor Instrument Companies, Rochester 1, New York.

R-466 Penford Finishing Gums — Complete data, including physical properties. Penick & Ford Ltd., Inc., 420 Lexington Ave., New York 17, New York.

R-467 Regeneration Of Zeolite Water Softeners — Explains advantages of Lixate Process. International Salt Co., Scranton, Pennsylvania.

R-468 Dyeing Synthetic Fibers—Detailed analysis of methods and materials. General Dyestuff Co., 435 Hudson St., New York 14, New York.

R-469 Single Apron Stock Dryers — Presents latest idea in automatic drying. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-470 Eliminate Dye-Bath Shock — How to protect fabrics from crow's-feet, uneven shades. Foxboro Company, 487 Neponset Ave., Foxboro, Mass.

R-471 Continuous Peroxide Bleaching Ranges—Illustrations, description and specification of ranges. Rodney Hunt Machine Co., 49 Mill St., Orange, Mass.

R-474 Industrial Brushes — Features use on shears, printing machines. M. W. Jenkins' Sons, Inc., 444 Pompton Ave., Cedar Grove, N. J.

R-475 Waste Heat Recovery — Describes system of waste heat recovery from polluted water. Ludell Mfg. Company, 5200 West State Street, Milwaukee, Wis.

R-476 Washers For Scouring, Bleaching, Acidifying — Describes high-capacity, continuous process washers. C. G. Sargent's Sons Corp., Graniteville, Mass.

R-478 Wool Cleaning Unit—Describes unit for cleaning carpet wools mechanically before scouring. Proctor & Schwartz, Inc., 7th St. and Tabor Rd., Philadelphia 20, Pa.

FIBERS AND YARNS

R-501 Textile Research—Story of the Research Department. American Viscose Corp., 350 Fifth Avenue, New York 1, N. Y.

(Continued Next Page)

News about

B.F.Goodrich Chemical *raw materials*

denims in with whites?

Yes...Hycar-treated denims are colorfast

DENIMS sized with Hycar Latex are really colorfast —even in the first laundering. They can be washed along with fine white fabrics with no danger of discoloration.

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For further information write Dept. HF-4, B. F. Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, Ohio. Cable address: Goodchemco. In Canada: Kitchener, Ontario.

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Warp size . . . lasting abrasion resistance for cotton, rayon, denim

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R-502 Fortisan-36, New Textile Fiber —Includes charts, diagrams, text, presents technical properties. Textile Sales Dept., Celanese Corp. of America, P. O. Box 1414, Charlotte, N. C.

R-503 Caprolan Nylon Heavy Yarns —Describes strength, long flex life and ready dyeability. Fiber Sales Dept., National Aniline Div., 261 Madison Ave., New York 16, N. Y.

R-506 Rayon—Mile By Mile—Details on how rayon is produced mile by mile, perfect inch by inch. Industrial Rayon Corp., 500 Fifth Avenue, New York 18, N. Y.

R-507 The Chemstrand Nylon Story—Describes the birth and growth of Chemstrand nylon. Chemstrand Corp., 350 Fifth Ave., New York 1, N. Y.

RESEARCH—TESTING—LABORATORY

R-601 Testing Instruments—Descriptions of 37 instruments for testing textiles. Custom Scientific Instruments, Inc., 541 Devon St., Kearney, N. J.

R-603 Shadograph Weighing Devices —Pictures and information on various types of scales. Exact Weight Scales Co., Columbus 8, Ohio.

R-604 Evenness Tester—Details on taking the guess out of quality control. Uster Corp., 2516 Wilkinson Blvd., Charlotte, N. C.

MANAGEMENT, PROCESS ENGINEERING CONSULTANTS, FACTORS

R-701 Factoring Service—Details on advantages of factoring, including information on general banking and pension plans. Trust Company of Georgia, Atlanta, Ga.

R-702 Beechcrafts At Work — Tells how Beechcraft executive airplanes can save time and money. Southern Airways Co., Atlanta Airport, Atlanta, Ga.

R-705 The Wonalancet Way — Deals with current problems in Textiles. Wonalancet Company, 128 Burke St., Nashua, N. H.

R-706 A Fair Day's Pay And In Return A Fair Day's Work — Outlines proper utilization of labor, material and equipment. American Associated Consultants, Inc., 250 Park Ave., New York, N. Y.

GENERAL PLANT OPERATION

R-802 Belt Lacing Equipment — Includes prices, specifications, etc. Clipper Belt Lacer Co., Grand Rapids, Michigan.

R-803 Window Washing Systems — Tramrail Equipment enables men to reach all windows. Cleveland Crane & Engineering Co., Tramrail Division, Wickliffe, Ohio.

R-804 Motor Selector—How to select A-C motors for specific application. Reliance Electric and Engineering Co., 1088 Ivanhoe Rd., Cleveland 10, Ohio.

R-805 Everything For Floor Care — Describes scrubbing, waxing, polishing and mopping equipment as well as waxes and sealers. Finnell Systems, Inc., Dept. TI, 1300 East St., Elkhart, Ind.

R-806 Rotary Pressure Joints—Details on self-lubricating, self-adjusting, self-aligning joints. The Johnson Corp., Three Rivers, Mich.

R-807 Servicing "One-Shot" Lubricators—Describes high capacity spring discharge piston pump lubricator. Bijur Lubricating Corp., 151 W. Passaic St., Rochelle Park, N. J.

R-808 Reduce Vibration — Illustrates savings possible through installation of Unisorb. The Felters Co., 216 South St., Boston 11, Mass.

R-810 Stop Corrosion — Details on "Speed-Rex" paint for metal, wood and concrete. Truscon Laboratories, Box 69, Milwaukee Junction, P. O. Dept. T, Detroit 11, Mich.

R-811 Cleaning Systems — Complete details on "Certified Climate and Cleaning Systems." Parks-Cramer Co., Fitchburg, Mass.

R-812 Mechanical Power Transmission — Includes drawings, dimension, weights, prices, application. Dodge Mfg. Corp., Mishawaka, Indiana.

R-814 Schaub "03" Deaerators—How a simplified principle and good engineering reduce prices. Fred H. Schaub Engineering Co., 2110 South Marshall Blvd., Chicago 23, Ill.

R-816 Leather Belting — Selection, installation, proper maintenance. Atlanta Belting Co., 508-510 Whitehall St., S. W., Atlanta, Ga.

R-817 One-Shot Lubricators—Details on pull-type semi-automatic lubricators. Bijur Lubricating Corp., 151 W. Passaic St., Rochelle Park, N. J.

R-819 Steel And Tank Service — Explains importance of periodic inspection, maintenance. Steel and Tank Service Co., 118 West 24th St., Charlotte, N. C.

R-820 Floaxial Dial Scales — Explains mechanism and gives applications. Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill.

R-821 Modern Methods Of Textile Floor Maintenance — Complete details on taking care of mill floors. G. H. Tennant Co., 2530 N. Second St., Minneapolis 11, Minn.

R-822 Industrial Greases — Describes multi-purpose lithium soap industrial greases. Sinclair Refining Co., 600 Fifth Ave., New York, New York.

R-823 Roller Bearings For Textiles —How roller bearings are employed for more profitable textile production. Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

R-824 Cylinders And Boosters — Complete listing of "in stock" equipment including proce and description. Miller Fluid Power Co., 2040 N. Hawthorne, Melrose Park, Ill.

R-826 Maintenance Of Variable Speed Drivers — Illustrates simple program for keeping drives in top shape. Reliance Electric & Engineering Co., 24701 Euclid Ave., Cleveland 17, Ohio.

R-827 Textile Mill Motor Control — Describes combination starters for textile machines. Cutler-Hammer, 315 N. 12th St., Milwaukee, Wis.

R-828 Blower And Exhausters — Full description, including detailed drawings. Buffalo Forge Co., 490 Broadway, Buffalo 5, N. Y.

R-829 Paint Stripping Booklet — Explains simplified method of stripping paint. Oakite Products, Inc., 22 Thames St., New York 6, New York.

R-830 Air Filtration — Illustrates Auto-Airmat, a dry-type air filter. American Air Filter Co., Inc., 275 Central Ave., Louisville 8, Ky.

R-832 Drinking Fountains & Coolers —Description of all models, dimensions, illustrations. Halsey W. Taylor Co., Warren, Ohio.

R-833 Textile Leathers Catalog — Characteristics and advantages of "Tannate" leathers. J. E. Rhoads & Sons, 2100 W. Eleventh St., Wilmington, Del.

R-834 Catalog Of Needle Bearings — Design, application for five types of needle bearings. The Torrington Co., Torrington, Conn.

R-835 Textile Lubrication — Shows methods and means of lubricating all machinery. The Texas Co., 135 East 42nd St., New York 17, N. Y.

R-836 Metered Lubrication — Points up advantages of central lubrication systems. Bijur Lubricating Corp., Rochelle Park, N. J.

R-837 Service Procedure For Ball Bearings—Helpful manual shows how to increase life of ball bearings. New Departure Div., General Motors Corp., Bristol, Conn.

R-839 Lubrication Of Electric Motors —How to lubricate and clean ball and roller bearings. New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, New York.

(Continued Next Page)

Put your fabrics
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COLOR FASTNESS

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SOLOPHENYLS*—The standard of light fastness by which all other direct dyestuffs are measured.

CUPROPHENYLS*—Combine excellent fastness to light with unusual wash fastness.

TINON* VAT DYES—Fine quality vat colors for use where maximum wash fastness is desired.

IRGALANS*—Produce superlative level dyeings of excellent light and fulling fastness in shorter processing time.

Don't just be satisfied that your fabrics meet today's increasing demand for color fastness, put them out in front with Geigy Dyestuffs. Make your fabrics stand out by their fresh, lasting color.

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R-840 Ball Bearings For Textile Machinery — Bearings for all phases of textile processing. The Fafnir Bearing Co., New Britain, Conn.

R-841 Lubrication Of Bearings — Helpful list of do's and don'ts to prolong bearing life. New York & New Jersey Lubricant Co., 292 Madison Ave., New York 17, New York.

R-842 Textile Mill Cleaning Guide — Methods and means of proper cleaning and maintenance. Oakite Products, 52 Rector St., New York 6, New York.

R-843 For Static Elimination — Eliminates static safely, simply and inexpensively. Simco Co., 980 Walnut St. Lansdale, Pa.

R-845 Cut Costs With Moyno Pumps — Describes "progressing cavity" pumps for mercerizing and sizing. Bulletin 30-TI, Robbins & Myers, Inc., Springfield, Ohio.

R-847 Lubricants For Textiles — Working samples of bearing lubricants, spindle oils, etc. Georgia-Carolina Oil Co., Box 101, Macon, Ga.

R-848 Oil-Tight Pushbuttons. — Describes line of pushbutton units for textiles. Cutler-Hammer, Inc., Milwaukee, Wisconsin.

R-850 New Lubricated Plug Valves—Semi-steel and steel lubricated plug line. The William Powell Co., 2525 Spring Grove Ave., Cincinnati 22, Ohio.

R-851 "Tank Talk"—Shows various types of elevated steel tanks. R. D. Cole Manufacturing Co., Newnan, Ga.

R-852 Cotton Mill Equipment — Traces pictorially the steps in processing raw cotton into finished cloth. Westinghouse Electric Corp., 511 Wood St., Pittsburgh 30, Pa.

R-853 Micro Switch Bulletin—Catalog of products includes prices, applications, etc. Micro Switch Div., Minneapolis-Honeywell Regulator Co. Freeport, Ill.

R-854 Roller Bearings For Textiles—How roller bearings can help production. Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

R-855 Unit Heater — Data on the Herman Nelson horizontal and vertical units. American Air Filter Co., Inc., 215 Central Ave., Louisville, Ky.

R-856 Stainless Steel For Textiles—Applications and advantages of stainless textile equipment. Allegheny-Ludlum Steel Corp., Dept. TI-71, Oliver Bldg., Pittsburgh 22, Pa.

R-857 Floor Scrubber — Description and specification for Scrubber Vac. Finnell Systems, Inc., 1300 East St., Elkhart, Ind.

R-861 "Vari-Pitch" Sheave Bulletin —Control by means of pitch diameter adjustment described. Allis-Chalmers Mfg. Co., Milwaukee 1, Wis.

R-863 Penetrating Wood Finish — Describes floor seals for textiles. E. I. Du Pont De Nemours & Co., Inc., Finishes Div., Wilmington, Del.

R-864 Certified Climate Air-Changer System — Describes use with direct humidification for partial or complete air conditioning. Parks-Cramer Co., Fitchburg, Mass.

R-868 Ridge Tool Prices—Capacities and weights included along with pictures. Ridge Tool Co., Elyria, Ohio.

R-869 Stainless Steel Fabrication — Information on ventilating and drying, slasher exhaust, and materials handling in stainless. Sims Metal Works, West Point, Ga.

R-871 Color Conditioning — How to put color to work for you. E. I. Du Pont De Nemours & Co., Inc., Finishes Div., Wilmington, Del.

R-872 Metal Conveyor Belts — Illustrates entire range of manufacture. Ashworth Bros., Inc., Metal Products Div., Fall River, Mass.

R-873 Rihco Humidifiers And Cooling Systems—Describes new atomizers to lessen air consumption in evaporative cooling systems. Aldrich Machine Works, P. O. Box 750, Atlanta, Ga.

R-874 Dynac Brake Motors—Electrical braking of a-c motors-roving, spinning, knitting. Westinghouse Electric Corp., Pittsburgh, Pa.

R-875 Textile Applications For "Scotch" Tape—Some good ideas on using "Scotch." Minnesota Mining & Mfg. Co., St. Paul 6, Minn.

MATERIALS HANDLING

R-901 Casters And Wheels—Casters and wheels for all applications. Darnell Corp., Ltd., 12000 Woodruff Ave., Downey, Calif.

R-902 Canvas Baskets — Complete line for textile use. W. T. Lane & Brothers, Poughkeepsie, N. Y.

R-903 Overhead Handling Equipment — Shows successful applications of monorail systems. American Monorail Co., 13106 Athens Ave., Cleveland 7, Ohio.

R-904 How To Test Corrugated Boxes —Offers comprehensive check-list for judging boxes. Hinde & Dauch, Sandusky, Ohio.

R-905 Conveyor Key Book—How to step-up production with modern conveying. Logan Co., 1115 Franklin St., Louisville, Ky.

R-906 How To Select A Lift Truck—Excellent means for price comparison between similar trucks. Hyster Co., 2902 N.E. Clackamas St., Portland 8, Oregon.

R-907 Corrugated Containers — Describes Multi-Unit and Bulk Container. Gaylord Container Corp., 111 N. 4th St., St. Louis 2, Mo.

R-909 Tramrail Engineering And Application — Data on how Tramrail Equipment can cut handling costs. Cleveland Tramrail Div., Cleveland Crane and Engineering Co., 1036 East 289th St., Wickliffe, Ohio.

R-910 How To Specify Packaging — Regulations on shipment, how to determine which package to use. Hinde & Dauch, Sandusky, Ohio.

R-911 New Lift Trucks—Shows latest trends in lift truck design. Hyster Co., 2902 N.E. Clackamas St., Portland 8, Oregon.

R-912 Materials Handling For Textiles—Shows how fibre trucks can increase efficiency, protect products. National Vulcanized Fibre Co., Wilmington 99, Del.

R-913 Continuous Power Conveyor—Complete information on Zig-Zag Conveyor. Richards-Wilcox Mfg. Co., Aurora, Ill.

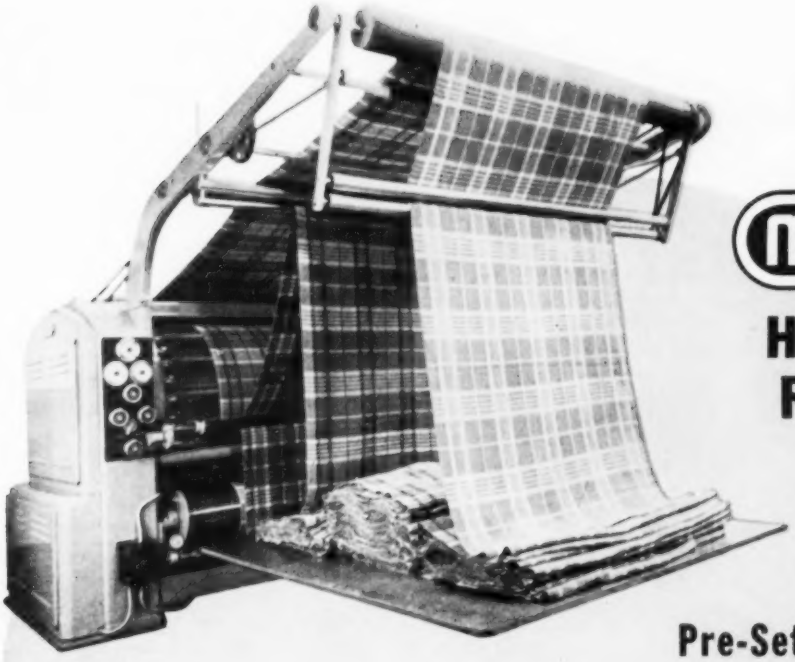
R-914 Stresses On Overhead Tracks —Covers track peening, discusses stresses. Cleveland Tramrail Div., Cleveland Crane & Engineering Co., Wickliffe, Ohio.

R-915 Scientific Materials Handling —Describes various materials handling devices, includes pictures. Bennett Rose Co., Box 8, Roebuck, S. C.

R-916 Overhead Materials Handling —Treats twin fan ceiling cleaners and shock proof electrification as well. Louden Machinery Co., Fairfield, Iowa.

R-917 Little Packaging Library — Series of booklets covers the business of shipping in corrugated boxes. Hinde & Dauch, Sandusky, Ohio.

R-919 Improved Materials Handling —"Materials in Motion" describes use of fibre containers. National Vulcanized Fibre Co., 1056 Beech St., Wilmington, Del.



MONFORTS

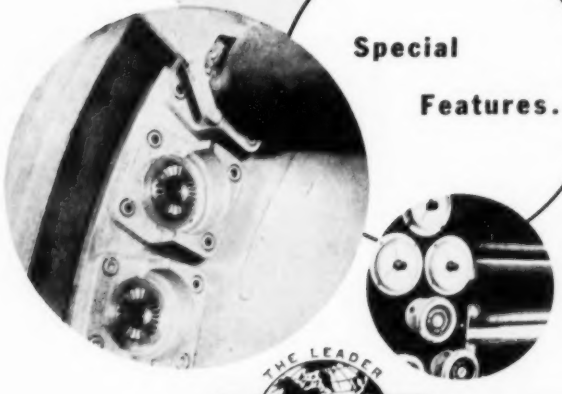
HIGH SPEED RZ NAPPER

Automatically Maintains Pre-Set Napping Effect *at any speed*

The RZ Napper requires no calculations—no re-setting of pile and counter pile rollers—when speeds are changed. Cloth speeds and napping effect are ALWAYS automatically synchronized to produce the exact napping effect desired. This results in higher sustained speeds (45 yds. per minute). Better control of napping action also permits an average of 30% fewer cloth runs.

Mill tests show that the output of the RZ Napper is several times that of conventional nappers. It has also proven highly effective on types of cloth which have previously been difficult to nap.

Write for full information on this versatile and economical RZ Napper.



Special Features. . . **Completely dustproof driving elements and bearings. Napping rolls can be removed in 2 minutes (each), without disturbing machine journals, bearings, or gears. Settings can be made easily and quickly, and can be checked on indicators.**

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COCKER Machine and Foundry Co., Gastonia, N. C.

Monforts Agencies:
Northeastern U.S.A.—Texplant Corp., 695 Summer St., Stamford, Conn.
Canada—Crowther Limited, 212-214 Victoria Ave., Montreal 6, Que.

Personal NOTES ABOUT MEN YOU KNOW

(Continued from page 30)

Dean, Canadian Celanese, Ltd., Drummondville, Que., vice-presidents. **Dr. Arne Greyborn,** Bruck Mills, Ltd., Montreal, treasurer; and **James M. Lowe,** Nova Chemical Corp., Montreal, secretary.

Newly elected president of Phi Psi national textile fraternity is **George F. Long** of the Harchem division of Wallace & Tiernan. Mr. Long succeeds **Willard A. Colby, Jr.,** Emery Industries, who is now editor of the Phi Psi Quarterly. Other officers are: **Roger J. Gentilhomme,** Sanforized division of Cluett Peabody & Co., vice-president; **Benjamin S. Bellemere,** Bellemere Chemicals Co., secretary; and **Mortimer T. Farley,** Taylor Symonds Co., treasurer. * * * Honorary membership in Phi Psi was awarded to **Charles F. Broughton,** former president and chairman of Wamsutta Mills, and to **John J. O'Brien,** New York sales manager of the Danielson Finishing Division of Powdrell & Alexander.

C. M. Jones of C. M. Jones & Co., Calhoun, Ga., has won the state American Legion Award for Hiring the Handicapped. The award went to the textile manufacturer because of the fact that he had employed the greatest percentage of handicapped persons. [Story of Mr. Jones' integrated tufting operation appeared in TI for June, 1957, pp. 90-94.—Eds.]

Herbert E. Kegelman, who has served as a director, controller, and vice-president for finance of The Linen Thread Co., Inc., New York, N. Y., has been elected president of the company, succeeding **H. Wickliffe Rose,** who continues as a director and consultant. Mr. Kegelman succeeeds Mr. Rose also as president of the Dolphin Jute Mills.

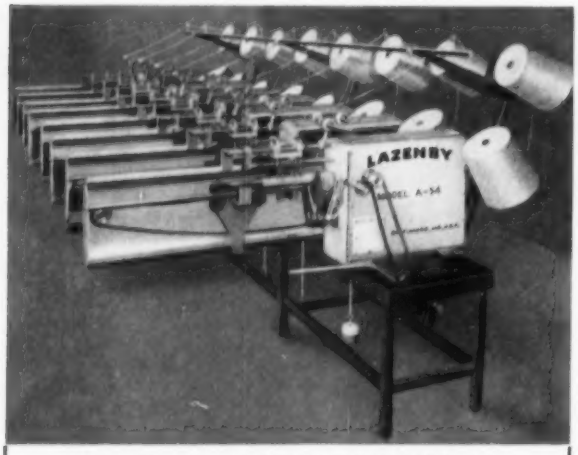
In the New York City office of Massachusetts Mohair Plush Co., the newly-created post of assistant treasurer is occupied by **Leroy Wardwell,** who also retains the post of assistant treasurer of the Dana Warp Mills division. Mr. Wardwell came from Westbrook, Maine, to the New York office. **George Simpson,** head of yarn sales for all divisions, is now also in charge of the firm's yarn mill at Lowell, Mass.

Watson Peterson, Jr., has been named personnel manager of Waumbec Mills, Manchester, N. H. He was previously with the Edwards division of Bates Manufacturing Co., Augusta, Maine, in a similar capacity.

Guy H. Kaylor, is now production manager, Wehadkee Yarn Mill, Talladega, Ala.

J. A. Atwood 3rd has been promoted to president and treasurer of Wauregan (Conn.) Mills, Inc., succeeding **Gordon Harrower,** now chairman of the board. **A. M. Meade** is new secretary and assistant treasurer.

Newly-elected chairman of the Cotton Buyers division of the S. C. Cotton Manufacturers Association is **Ernest W. Carpenter,** manager of the cotton department of Greenwood (S. C.) Mills, Mr. Carpenter succeeds **Ben F. Tipton,** assistant vice-president of Woodside Mills, Greenville, S. C. Others elected were **Oscar W. Cate,** of Ely & Walker, Greenville, vice-chairman; and to the executive committee, **J. A. O'Neale,** of The Springs Cotton Mills, Lancaster, S. C.; **F. H. Cunningham** of Reeves Broth-



WIND COPS OF MAXIMUM DIAMETER AND LENGTH

New Automatic Winder by Lazenby, Model A-54, winds cops of maximum yardage from 8" to 22" long and 1 1/8" to 2" in diameter.

labor saving — quick changeover
dial control — precision manufacture
quick adjusting — Timken bearing equipped

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The F. A. LAZENBY Company

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TON-TEX VE-E-ZY SEGMATIC V-BELTING

Mile after mile of Ve-E-zy speeds production in industry on V-Belt drives. Made of segments punched from Ton-Tex Belting stock, and coupled with special clamping bolts and nuts.

- Reduces inventory
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- Provides "off-the-spool" service
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A, B, C and D Sections — Fits all standard sheaves — 50 and 100 foot spools, in regular and Oil-Ex (oil and heat resistant) construction.

Time tested for 15 years.

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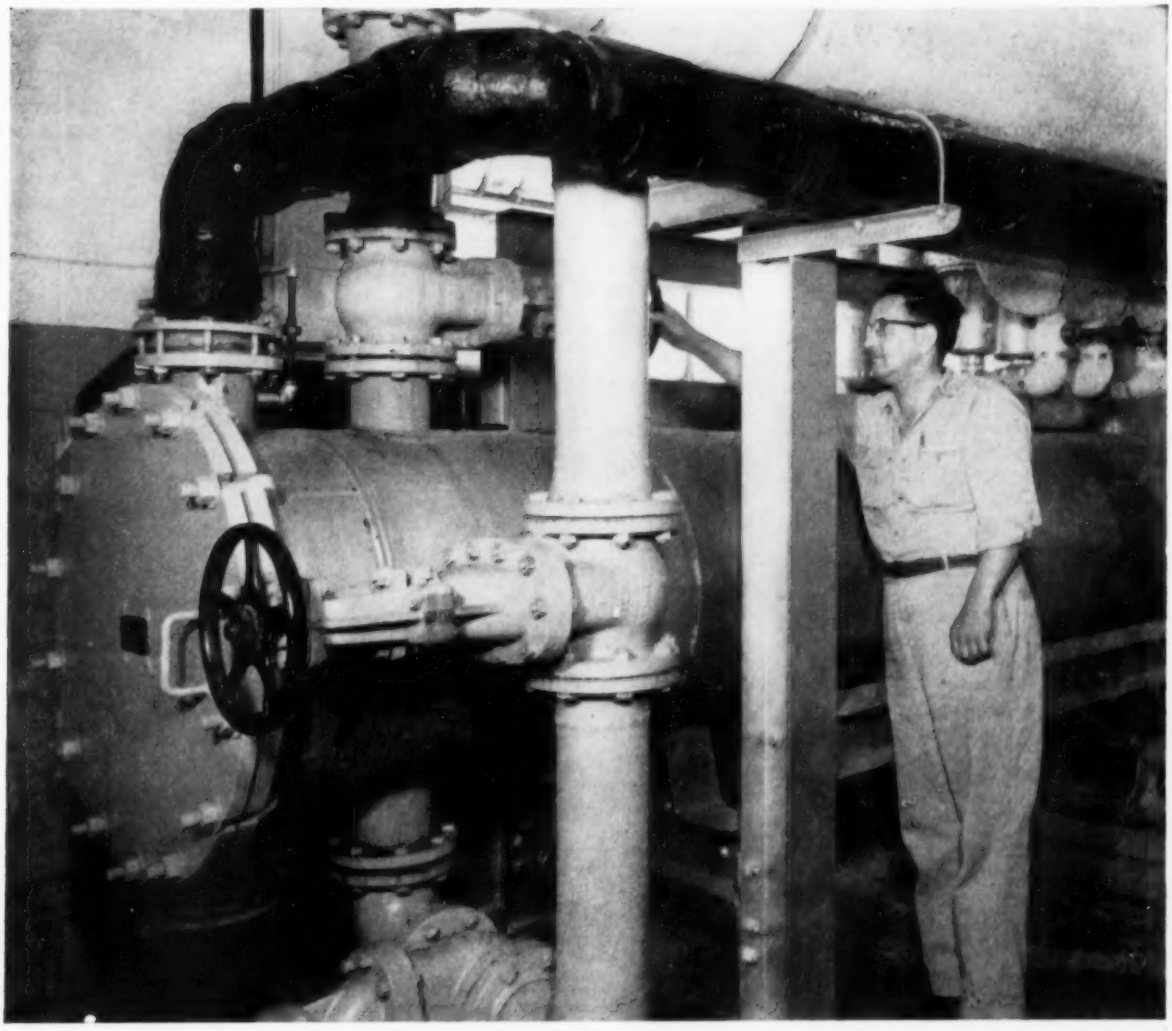

p-k equipment saves Magee Carpet Co. cost of a new boiler

A completely new hot water system by P-K has given the Magee Carpet Co. of Bloomsburg, Pa., such reduced steam requirements that a contemplated additional boiler became unnecessary.

P-K equipment installed comprised a 50,000 gallon storage tank supplied by heat from (1) waste heat in spent dye liquor and (2) waste heat from exhaust steam, through a reclaimer and an instantaneous water heater.

This system provided ten times the capacity of the former equipment and supplies 70,000 gal. of hot water per day with ample margin for expansion. Steam consumption has been materially decreased. The ultimate capacity is 800 gallons per minute of water 180 F or over.

If you have a heat transfer problem, bring it to P-K where the product is tailored to your needs – individually engineered to your requirements. For further information write to Patterson-Kelley Co., Inc. 107 Wilson St., East Stroudsburg, Pa.

0657

Patterson Kelley

Textile and Laundry Division

Waste Water Heat Reclaimers • Storage Water Heaters • Condensate Coolers
Instantaneous Heaters • Steam-Mizers • Feed Water Heaters

Personal NOTES ABOUT MEN YOU KNOW

ers, Spartanburg, S. C., and **T. D. Truluck** of Deering, Milliken, Union S. C.

Wamsutta Mills, New Bedford, Mass., announces the resignation as president of **Joseph H. Axelrod** who has also relinquished his other positions with M. Lowenstein & Sons and affiliates. He is succeeded at Wamsutta by **Donald B. Tansill,** also president of M. Lowenstein & Sons, Inc.

Jack Harlow, formerly with the Bellman Brook Bleachery, Fairview, N. J., is now general manager of the Velveray Corp.'s Fall River, Mass., mill, succeeding John W. Riggenbach who resigned.

Edward Kosiba has been appointed to head up the technical department of the spun synthetic fibers division, of J. P. Stevens & Co., Inc., succeeding **Joseph Meierhaus,** retired. **Steve Szabo,** who has served in a technical capacity in the spun synthetic fibers division, has been named Mr. Kosiba's assistant.

Edwin S. Mayer of Sonora, Texas, was elected chairman of the board of directors of the Wool Bureau, succeeding **T. G. Carter.** Mr. Mayer is one of two representatives of the American Wool Council on the board.

Recently elected chairman of the South Carolina Division of Southern Textile Association was **W. B. Etters,** Reeves Brothers, Inc., Spartanburg, S. C. Mr. Etters succeeds Joe N. Jenkins, Kendall Mills, Pelzer, S. C. **Robert A. Liner,** Greenwood (S.C.) Mills, was elected vice-chairman.

OBITUARIES

Henry P. Benson, 90, president of the former Naumkeag Steam Cotton Co., Salem, Mass.

James Lloyd Braman, 75, retired chairman of the board of governors of F. C. Huyck & Sons, Albany, N. Y.

Wm. Allen Broadfoot, 64, chairman of the board of Gera Corp., and vice-chairman of List Industries, Jewett City, Conn.

Charles C. Cheyney, 68, vice-president in charge of sales for Buffalo (N. Y.) Forge Co.

Julius H. Cohen, 49, official of Queen Knitting Mills, Philadelphia, Pa.

Timothy E. Connor, 90, retired vice-president, director, and sales manager of Foster Machine Co., Westfield, Mass.

Kenneth I. Harper, 54, dyehouse superintendent of Franklin Process Co., Philadelphia, Pa.

Charles Mackinnon, 57, first vice-president of Plymouth (Mass.) Cordage Co.

Alice C. Moore, retired secretary-treasurer of the National Association of Finishers of Textile Fabrics, Jersey City, N. J.

Joe C. Moore, 53, head of the textile engineering department at Bemis (Tenn.) Cotton Mill.

John B. Oliver, 58, retired superintendent of Piedmont Mills, East Point, Ga.

Carl Osborne, 71, former superintendent for the former American Woolen Co., Fairfield, Me.

Max P. Planer, 77, secretary-treasurer of Piedmont Mills and Piedmont Fabrics Co., Gastonia, N. C.

Robert S. Poblocki, 57, part owner of the Dodge Yarn Mills, Webster, Mass.

Francis W. White, 63, former president of American Woolen Co.

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complete removal of size is a first essential

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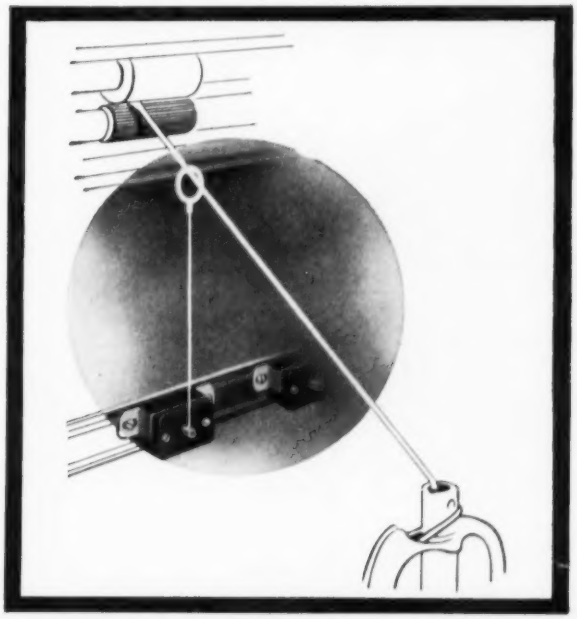
***instantly* stops frame when these defects occur . . .**

- SLIVER RUNOUTS
- LAPPED ROLLS
- CHOKES (sliver)
- PLUGGED FLYERS
- SINGLINGS
- RUNOVERS
- CLEARER WASTE
- BAD SLIVER SPLICES

. . . MAKING IT POSSIBLE FOR AN OPERATOR TO RUN 8 MODERN FRAMES. 4 OPERATORS TAKE CARE OF ALL THE DUTIES ON THIS NEW 32 FRAME JOB:

Frames per operator	8
Size of frame	12 x 7
Hank roving	1.15
Spindles per frame	96
RPM of front roll	130
Percent efficiency	89
Size can in creel	15" x 42"

It's a good bet that with ADAMSTOP YOUR operators can run 25% to 100% more spindles.



This ADAMSTOP Nylon Eyelet monitors all roving production from sliver to spindle! If the roving slackens or breaks due to any roving failure, the Adamstop eyelet falls to either side making contact with an electrical circuit which stops the frame. This eliminates faulty production, excessive waste, damage to the roving frame and frees the roving tender of close supervision of each frame.

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What the TEXTILE MILLS are doing

According to a recent announcement, the brand name and inventory of **Roman Stripe Hosiery Co.**, Easton, Pa., has been purchased by **Alba Hosiery Co., Inc.**, Valdese, N. C. The announcement further states that Roman Stripe will liquidate.

The 35th annual inspection tour of the **Avondale Mills** manufacturing units, was held during the period from April 29 to May 6, inclusive. The inspection included tours through the nine plants making up the Avondale "family" of plants.

Jefferies Processors, Inc., a Philadelphia firm, is establishing its second dye house in Puerto Rico since 1955. The new affiliate, to be called **Textile Processors Corp.**, will be a 15,000 sq ft operation to process Orlon, Dacron, nylon, and other synthetics.

A recent announcement states that there is a proposed merger of **Bachmann Uxbridge Worsted Corp, American Hard Rubber Corp.**, and **Wardell Corp.** pending stockholder acceptance. The name of the new firm is to be **Amerace Corp.**

Woonsocket (R. I.) Sponging Co., Inc., has been purchased by a group headed by Abraham Ziskind of Fall River, Mass., and is to begin operations immediately, employing from 50 to 75 people.

More than 250 high school students from Alabama and Georgia were recently the day-long guests of **West Point (Ga.) Mfg. Co.** The students were received in keeping with the company's policy of inviting such groups (Annual Senior Visitation) annually for a two-fold purpose as stated by E. R. Lehmann, West Point's vice-president in charge of industrial relations: To show the students that the largest industry in their area is genuinely interested in them and is proud of their acheivements and to show the students that there are many glamorous, opportunity-filled careers right at home." * * * Recently the firm approved a $4,000,000 modernization program, the largest single allocation in the company's history, which will be used in part to install "big package" spinning.

The final returns from the National Safety Council contest for the year 1956 report that out of 218 competing textile mills, 28 set perfect records with a frequency rate of 0.00 for the 12 months, and that there was a total of 453,128,000 man-hours worked. This figure is an increase of 9% over the number of man-hours for 1955. The 1976 injuries experienced among the 218 mills reflect an increase of 41% over the number for 1955, and an increase of 29% in final rate compared with 1955. The frequency rate for the entire contest was 4.36. Among those with perfect records are the following domestic textile producers: (Div. 1, Group A) **Martha Mills**, Thomaston, Ga., division of the **B. F. Goodrich Co.**; (Div. 2, Group A) the **Clover**, S. C. division of **The American Thread Co.**; (Div. 2, Group B) **Callaway Mills Co., Unity** plant, LaGrange, Ga.; the **Oakland** plant of **Kendall Cotton Mills**, Newberry, S. C.; **Carter Fabrics** division (South Boston, Va.) and **Stevens** plant (North Andover, Mass.) of **J. P. Stevens & Co., Inc.**; the Red Springs, N. C., plant of **Amerotron Corp.**; **Cannon Mills Co., Plant #5**, Concord, N. C.; **Alice Mfg. Co., Arial** plant, Easley, S. C.; (Div. 2, Group C) **Warren** division of **The Graniteville Co.**, Warrenville, S. C.; **Louise** plant, **Amerotron Corp.**, Charlotte, N. C.; **Harris** plant, **Greenwood (S. C.) Mills; Amerotron Corp.**, Honea Path, S. C., plant; **Coats & Clark, Inc.**, Acworth, Ga., plant; and **Cannon Mills Co., Plants 6** and **10**, Concord, N. C., and **Plant #11**, Rockwell, N. C.

For the second consecutive year, **Martha Mills** textile division of the B. F. Goodrich Co., Thomaston, Ga., has received the first-place safety trophy awarded by the Cotton Manufacturers Association of Georgia. Working without a chargeable accident in 1956, the employees completed 3,923,546 man-hours without injury. There were 114 competing mills. Through March, 1957, the plant

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Can be placed in wall recesses, under counters, on shelves or in cupboards and connected to any type Halsey Taylor fountain.
Removable access and ventilation panel available for wall recess installation.
This new quality-built space-saving package unit, in every way, reflects the usual high standards of workmanship and dependability for which Halsey Taylor drinking-water fixtures have become famous. Ask for further information.
The Halsey W. Taylor Co., Warren, Ohio
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COOLER FOUNTAINS
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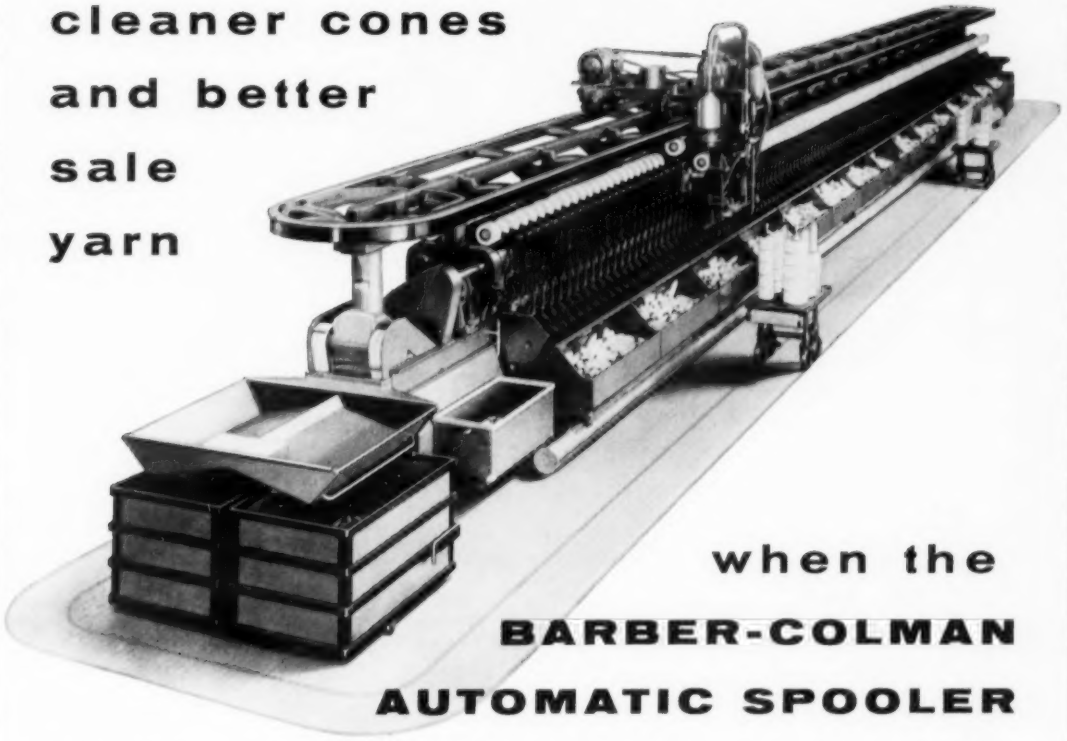
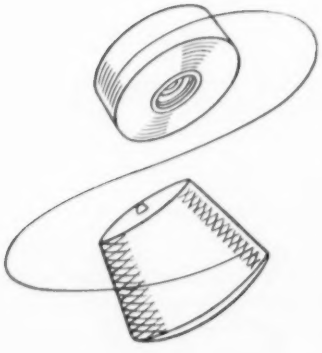
cleaner cones and better sale yarn



when the BARBER-COLMAN AUTOMATIC SPOOLER is used to make cheeses first



The introduction of Barber-Colman AUTOMATIC SPOOLING onto cheeses between the spinning and coning can actually make BETTER SALE YARN at LOWER COST!

There are two main reasons for such results. First, the Automatic Spooler has reliable cleaning devices that automatically catch and remove such imperfections as slubs, gouts, wild yarn, and other irregularities. All knots are mechanically-tied, uniform, small, true Weaver's Knots. Second, on the winder, the package, wound from the cheese rather than from bobbins, is *completely filled without stopping,* thus producing a uniform cone with no straight winds. By eliminating stops, machine and labor costs are substantially reduced.

Cheeses from the Automatic Spooler also can be put on doubling or twisting frames or, when wound on stainless cores, can go direct to the dyeing. Many prominent Sale Yarn Mills are now using Barber-Colman Automatic Spoolers for just these reasons. *If you want to see who these mills are, write us for a copy of our Sale Yarn Mill List.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

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What the TEXTILE MILLS are doing

had completed over 10,800,000 man-hours without a disabling injury, the last accident having occurred in October, 1954. * * * Goodrich has purchased 20 acres of land in Exeter Borough, Luzerne County, Pa., for the site of a new textile processing plant. On this site a plant having 80,000 sq ft of floor space will be erected for processing rayon and nylon tire cord used in tire construction in the company's five tire plants in the United States.

A new vinyl-coated shoe fabric, Dur-O-Lex, is being made by the **Graniteville** (S. C.) **Co.** in 20 different colors.

At a farm and industry meeting recently, **Huntsville** (Ala.) **Mfg. Co.** played host to the local county Farm Bureau chapter. Woodrow E. Dunn, vice-president of the textile firm, stated that the meeting was "to show our people that our business is closely related to theirs, and we simply are entertaining them as friends and neighbors, who in turn have a real interest in our work."

Teen-age girls who are allergic to wool, yet who wish to wear socks of the style and feeling of wool, may take cheer from the announcement

by **The Adler Co.**, Cincinnati, of that firm's production of "Woolylon," an off-white nylon sock which, Adler says exactly simulates wool.

Chemspun Yarns, Ltd., is reported to be transferring its novelty yarn twisting operations from Brooklyn, N. Y., to Mooresville, N. C., where approximately 150 people will be employed. A winding operation will continue in Brooklyn.

Claremont Knitting Mills, Philadelphia, Pa., is establishing a special department to design sweaters to match separates both for texture and color. The firm will invest about $50,000 in equipment, and will assign a designer, a chemist, and a master dyer to the department.

The Atlanta, Ga., plant of **Fulton Bag and Cotton Mills** recently sold 196 houses in its mill village. Of that number, 90% were sold to employees.

The Dalton, Ga., plant of Collins & Aikman Corp., **Mayfair Chenilles**, has opened another plant in that city for finishing and shipping car carpeting.

According to a recent announcement, **Monarch Textiles, Inc.**, of Philadelphia, Pa., has leased 5000 sq ft of floor space in the former Bromiley Mills building at Adams Ave. and Leiper St. to be used for the installation of additional machinery.

Chatham Mfg. Co., Elkin, N. C., has taken over the manufacture and sale of all blankets formerly sold by **North Star Woolen Mill Co.**, Sanford, Me. Previously Chatham had taken over the manufacture of the line of Kenwood blankets produced by F. C. Huyck & Sons, Rensselaer, N. Y.

The interlining firm of **Puritan Looms, Inc.**, has confirmed its decision to move its weaving and spinning operations from Philadelphia, Pa., to its plant in Monroe, N. C.

A 40-ft by 100-ft, one-story factory is under construction in Northfield, Vt., for housing **Rabbit Hollow Knitting Co.** which now occupies the second floor of a former garage.

Riegel Textile Corp. has awarded the cotton mill personnel of its Trion, Ga., plant a Certificate of Appreciation for having completed 1,000,000 man-hours without a lost-time injury.

Forty-eight of the nation's top retail executives visited the Slater, S. C., fiber glass plant of **J. P. Stevens & Co., Inc.**, on May 9. The group, welcomed to Greenville, S. C., by Mayor

RESEARCH and SERVICE is the formula that makes NORTH size the best buy for your mill.

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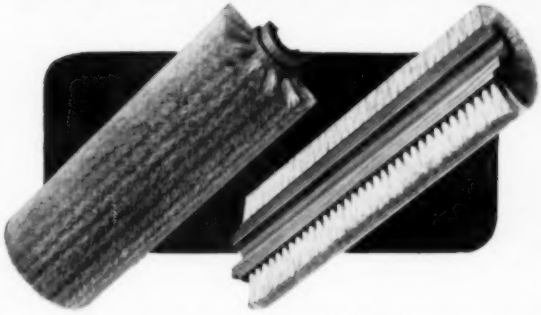
The Nation's largest manufacturer of Sizing Compounds, Gums, Waxes, and other kindred products for all warp yarns.

NOW! Cut Brush Costs with FELTON "Throw-away" Comber Cylinder Halfs



Felton machine made Comber Cylinder Brushes, either split or solid block style, are so low in cost you can now afford to throw away worn down refillable units. Replace with sturdily constructed Felton Brushes. Stocks on hand for all popular makes of combers. Try Felton on your next order.

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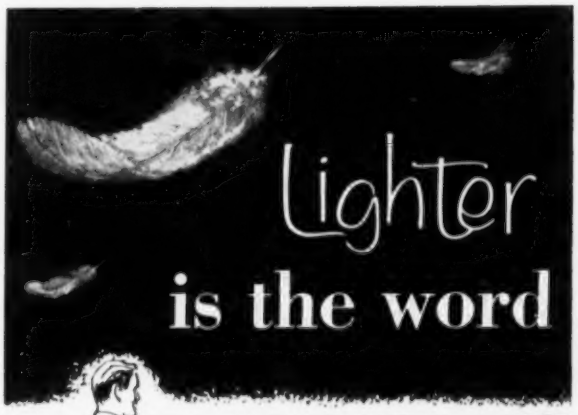

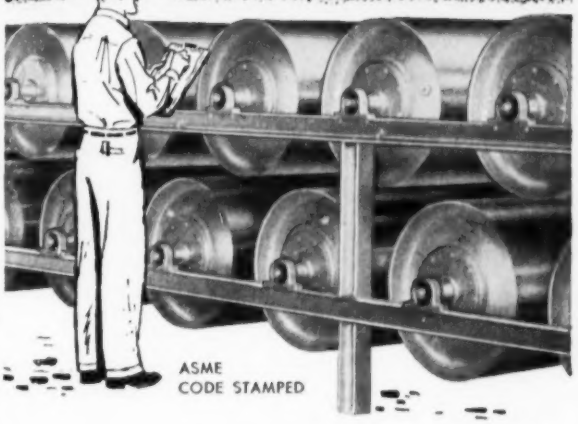

There's no point in pulling extra weight in old flat heads, now that the new Sims Stainless Steel 75 psi reverse dished head Dry Cans* are available They aren't featherweights, true . . . but they're *lighter . . . easier on the bearings . . . require much less horsepower and space.* Bearings, drive chains and belts give longer, smoother performance with less costly down time, since the lighter the load, the longer they last. These new Sims Dry Cans give uniform transmission of heat and efficiently eliminate steam condensate. Furnished Teflon-coated if desired.

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For ECONOMY and QUALITY

Our modern and progressive metal-working shops, skilled craftsmen and know-how — these are your guarantees of quality. For custom tailoring of stainless steel, call, wire or write now.

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QUALITY OR "Seconds"

Experienced Mill men know it costs just as much to make "seconds" as it does quality products.

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Steady use of "G. C." Quality Textile Lubricants will cut down on "seconds" and increase the quality of your products.

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Many Mill men know what we mean because they are using our products.

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What the TEXTILE MILLS are doing

J. Kenneth Cass and Steven's president Robert T. Stevens, flew from New York City to Greenville, made this visit to Slater, and returned to New York the same day.

Located in the former American Thread Co. plant in Fall River, Mass., **Watuppa Finishing Corp.** has made its second expansion within a year by adding more high speed corduroy cutting machines and dye jigs.

According to a recent announcement, **Kendall Cotton Mills,** a division of The Kendall Co., plans a $1,500,000 expansion and modernization move at its Albertville, Ala., plant. Opening, cleaning, roving, and spinning machinery will be brought up to date, and a weave room addition will permit the relocation of the 620 looms. The cloth and weave rooms will be equipped with an air change system.

The Anderson, S. C., branch of La France Industries is being moved to and consolidated with that company's **Pendleton Mfg. Co.,** holdings at La France, S. C.

Greenville (R. I.) Finishing Co., Inc., was recently purchased from the Associated Dyeing & Printing Co., Paterson, N. J., by John R. Illingsworth, former sales manager of Greenville, and is to be operated by him and his two sons, William and Richard.

Chrysler Mills, Inc., have moved from Sabin St. to new and larger quarters in the former Lorraine Mill at 560 Mineral Springs Ave., Pawtucket, R. I.

A new firm, **Fiber Glass Industries, Inc.,** has purchased the Amsterdam, N. Y., glass fiber plant of Bigelow-Sanford Carpet Co., Inc.

The recent purchasers of Massachusetts Mohair Plush Co., Inc., **Joan Plush Mills,** is moving it main offices to Lowell, Mass.

In an operating economy move, **Bates Mfg. Co.** has reaffirmed its decision to close its York division in Saco, Me., according to a recent announcement. Other economy moves by Bates include the consolidation of the office space of the Bates and Hill divisions in Lewiston, Me., and the moving of most of the office work from New York City to Lewiston.

Burlington Industries, Inc., has formed a new company, **Burlington Retail Fabrics Co.,** to "better serve the growing numbers of home-sewers." * * * The Cascade plant in Mooresville, N. C., has been announced the winner (among plants of its size) of a national award for employee communications programs conducted by business firms during 1956. The award competition, sponsored by the Chamber of Commerce of the United States, was based on methods used by business firms to inform their employees on business operations and economic matters.

A new brick addition, air conditioned, has been started by **Caron Spinning Co.,** at the firm's Robesonia, Pa., plant. The company has purchased machinery to allow a 50% increase in the production of high bulk Orlon, including Caron's two Caraloft yarns. * * * The formation of a wholly-owned subsidiary corporation for the purpose of buying and warehousing wool, **Caron Spinning Co. of Wisconsin,** has been announced.

A recent announcement states that **Cedartown (Ga.) Yarn Mills** is to be closed by its owners, Hyde Rakestraw Co.

In anticipation of installing new equipment, **Valley Green Hosiery Co., Inc.,** Warrington, Pa., has sold some of its 60- and 66-gauge machinery, and has halted production temporarily.

A new tufted rug manufacturing firm, **Velbet Craft & Rugs,** has been formed in Chattanooga, Tenn., and is located at 1901 Foust St.

The corduroy department of **Union Bleachery,** Greenville, S. C., has added another "Safe Year" to its safety record, making a total of 12 years the department has gone without a lost time accident. * * * The two new shuffle courts recently completed have been put into use by employees and their families.

Abney Mills, Anderson, S. C., in an effort to encourage high school graduates to study textiles, is inviting applicants for admission to Clemson College's freshman class to visit the Abney Mills plants in their respective areas of the state for plant tours and conferences on textiles as a career.

SUPPLIERS News

WHAT THEY ARE DOING

Thomas W. Metz has been appointed manager of the Mid-Atlantic region of **Allis-Chalmers Manufacturing Co.** industries group, succeeding the late Frank R. Freyler. Mr. Metz is succeeded as manager of the Indianapolis district by John L. Wiedey, formerly a representative in that district.

American Aniline Products, a unit of Koppers Co., Inc., announces several reassignments affecting personnel of its southern sales staff, which were effective June 1. Joe T. Bohannon, Jr., formerly manager Chattanooga branch, was transferred to sales department staff headquarters in Pittsburgh and is succeeded by Karl C. Ruppenthal, formerly assistant to the southern district manager at Charlotte, N. C. Edward S. Johnson was transferred from the Chattanooga sales service laboratory to the position of sales representative covering accounts in Tennessee and northern Georgia, and Clarence W. Angline from the unit's office in Columbus, Ga., to the sales service staff at Chattanooga.

D. G. Zachary has been named district sales manager for textile resins in the metropolitan New York - New Jersey district of the organic chemicals division of **American Cyanamid Co.,** with headquarters in Bound Brook, succeeding R. M. Fischer who is retiring July 1 after 17 years of service with the company.

John E. Bassill, president of **American Enka Corp.,** was principal speaker and a recipient of the honorary degree, Doctor of Textiles, at the 74th commencement exercises of the Philadelphia Textile Institute.

Scheduled for completion in 1958 is an addition of 85,000 sq ft to plant facilities at the **American MonoRail Co.,** which will permit consolidation of all the company's manufacturing operations in one plant.

Because of its program of diversification, the name of the American Safety Razor Corp. on July 1 officially became **A. S. R. Products Corp.** Among the company's industrial products are carpet and upholstery looms manufactured by the Van de Wiele Co. of Belgium.

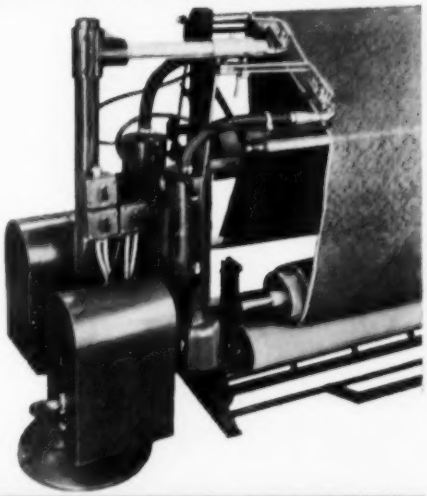
The Baker Manufacturing Co. of Greenville, S. C., has been incorporated to manufacture and distribute equipment and supplies to textile mills and other industry, with offices and plant at 5 Ellendale Avenue, just off Buncombe Road. Carl Baker, president, formerly associated with W. D. Dodenhoff Co., announces that the company is offering a full line of belting, check straps, harness straps, binder and box plate leathers, shuttle furs, and other textile supplies, and will also represent manufacturers of fiber glass, fiber, aluminum, and steel trucks, and other materials handling equipment. With Bamco as the company's trade name, the company will manufacture Bamco-Peerless long draft spinning aprons. T. A. "Tom" Sizemore will represent the company in North Carolina and Virginia, and W. W. Jordan will contact mills in South Carolina, Georgia, and Alabama.

Laurence T. Gerrity has been appointed assistant general sales manager and R. P. Wilson sales development manager of the Textile division, **Celanese Corp. of America,** succeeding Mr. Gerrity. Prior to his new assignment, Mr. Wilson was special assistant to W. D. Clark, general sales manager of the Celanese textile division. * * * Midwest district headquarters for the textile division in Chicago have been moved to the Merchandise Mart Building, from 22 West Madison Street. Included in the move were textile industrial and merchandising representatives of the company.

Ivan Bollinger has joined **The Chemstrand Corp.** as export manager to direct exports of Acrilan acrylic fiber and Chemstrand nylon yarn. Prior to joining the firm, Mr. Bollinger was import and export manager for The Schwarzenbach Huber Co. * * * Edward L. Pratt has been

now—trim selvages faster ...cut production costs!

selvage **TRIM-MASTER**



Cuts inspection time — combines trimming with inspection in one rapid operation. The ultimate in efficient selvage trimming for weaving, dyeing and finishing mills.

Adjustable for width and type of cloth. Cannot damage the fabric. Standard equipment in many leading mills.

For further information call or write:

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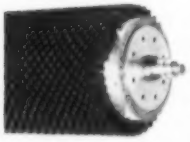
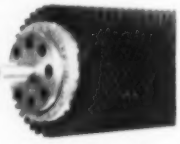
YEARS
OF SATISFACTORY MILL SERVICE WITH JENKINS' METLKOR BRUSHES

BRVM Motorized HERMAS Model Vertical Brushing Machine

"The high quality standards set by our engineering department for brushes used in our machines are amply covered by Jenkins' METLKOR Brushes. They have stood years of satisfactory mill service for our customers and, of course, for us," stated Mr. Robert Simpson, Sales Representative of Hermas Division, Curtis and Marble Machine Company. Hermas has proven the efficiency of Jenkins' METLKORS — the long lasting brush that can be rebristled. If you have any standard or special brush problems, write us today.



METLKOR brush used in Hermas Brushing Machine: precision made, accurately balanced. Filled with efficient long life Dupont "Tynex" Nylon. Available in fibre, hog bristle, etc.



METLKOR brush used in Hermas Shearing Machine: tufted construction, ruggedly built, refillable when worn. Available in fibre, hog bristle, Dupont "Tynex" Nylon, etc.

METLKOR brush used in Hermas Beaming, Measuring and Brushing Machine: light weight, for long trouble free life. Available in fibre, hog bristle, Dupont "Tynex" Nylon, etc.

Specify Jenkins' METLKOR
the original . . . the best *Metal Core* brush

METLKOR®
CYLINDER BRUSHES
and **LIFEWOOD®** WOOD BACKED BRUSHES

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SUPPLIERS News — WHAT THEY ARE DOING

assigned to the sales staff of the Acrilan sales division with headquarters at 350 Fifth Avenue, New York, N. Y., to handle sales of the acrylic fiber primarily in the blanket and related fields.

Joseph S. Fechteler has been elected a vice-president of **C.I.T. Financial Corp.** A long-time member of the company's executive staff associated with the operations of the factoring subsidiaries, Commercial Factors Corp., William Iselin & Co., and Meinhard & Co., Inc., Mr. Fechteler is a director of all three companies.

The division sales office of **Clinton Corn Processing Co.,** formerly located at 161 Spring Street Bldg., Atlanta, Ga., has been moved to 504 Bona Allen Bldg., Atlanta. R. C. Rau is in charge of the Atlanta sales office.

Cobble Brothers Machinery Co., Inc., has announced that it recently acquired the assets of the punchwork machine division of Van Dyke Textigraph Corp., pioneer machinery builders for the tufting industry.

Cocker Machine and Foundry Co. has been appointed American agent for the slashing equipment manufactured by Gebruder Sucker GmbH, M. Gladbach, Germany.

At a recent meeting, the newly elected board of directors of **Dacy, Inc.,** pioneers in the dehairing of cashmere and camel's hair in the South, re-elected all officers who continue to serve as follows: Howard P. Chandler, president; Harry L. Young, Sr., vice-president; Hjalmar W. Anderson, treasurer; and Harry L. Young, Jr., assistant treasurer and secretary.

David H. Abrahams, formerly a chemist with National Aniline Div., Allied Chemical and Dye Corp., has joined the New York laboratories of **Dexter Chemical Corp.**

Appointment of Hugh S. Jones, Jr., to fill a new position as technical representative in Europe has been announced by the textile fibers department of **E. I. du Pont de Nemours & Co., Inc.** From headquarters at St. Johannsvorstadt 80, Basle, Switzerland, Mr. Jones will assist the department's European representatives, distributors, and customers in the use of Du Pont fibers and the merchandising of products made from them.

Joseph P. Clancy has been appointed eastern district sales manager of the organic chemical sales department of **Emery Industries, Inc.,** with headquarters at the Philadelphia office. He succeeds J. W. Ritz, recently named assistant sales manager. Additional changes in the organic chemical sales force include the appointments of Joseph E. Quinty to the Chicago office; William C. Sowers to the New York office, and Arthur R. McDermott, succeeding Mr. Clancy as New England representative.

Maurice W. Richardson has joined **C. A. Litzler Co., Inc.,** as sales engineer for the firm's textile process equipment. Mr. Richardson was previously connected with Cleveland Process, Inc., as well as with eastern textile processors and equipment builders.

Roger L. Rummel, an **L. O. F. Glass Fibers Co.** management trainee for the past six months, has been assigned as an assistant in the customer service department of the firm.

A. Blair Powell, with headquarters in Norwood, Mass., is now general sales manager of **Mason-Neilan,** division of Worthington Corp. Mr. Powell was formerly manager of the Pittsburgh office. Three new regional sales offices established to provide increased services in key areas are headed by Warren F. Priest, eastern regional manager supervising Boston, Buffalo, New York, Skaneateles, Philadelphia and Pittsburgh; E. Putnam Head, southeastern regional manager supervising Atlanta, Birmingham, Charlotte and Jacksonville offices; and Alex M. Thackara, promoted to west coast regional manager with responsibility for Los Angeles, San Francisco, Seattle, Denver, Salt Lake, El Paso, and Phoenix offices. Malcolm D. Duncan has been named manager of a new Jacksonville office.

Stellite American Corp. announces that due to misunderstanding and ensuing confusion relating to their respective businesses, they have reached an agreement with Haynes Stellite Co., a division of Union Carbide Corp., to change their name to **Stellamcor, Inc.** All other phases of the business remain as before the change in corporate name.

Clemson News Bureau Photo

Reviewing points made in a loom motor class at the recent second annual Westinghouse Electric Corp. Textile School are (left to right) Ed Webb, Howard Redmond, J. F. Talley, W. W. Rogers, Dennis Shirley, H. R. Wilson, Don Crain, and J. L. Kirby. All the men are from South Carolina plants of J. P. Stevens & Co., Inc., with the exception of Mr. Talley who is with United Merchants and Manufacturers, Greenville, S. C.

Recently the second annual **Westinghouse Electric Corp.** Textile School was completed at Clemson (S. C.) College. Designed to aid textile plants in the training of master mechanics and electricians in the maintenance of electrical equipment, especially motors, the course offered lectures in electrical theory as well, and was extended to cover all the motors found in the average textile plant, from opening through finishing. Some 30 mills were represented by 78 enrollees.

Diamond Alkali Co. has adopted a new trademark called the "Chemical Diamond," replacing the horizontal lozenge or diamond-shape design formerly used. The new emblem, which carries a diamond shown vertically, also suggests the letter "d" as well as a chemical retort, symbolic of the chemical industry.

Milton Roy Co. announces the appointment of John Procopi as sales manager, responsible for marketing activities in connection with the firm's line of controlled volume pumps and chemical feed systems. Mr. Procopi who resides in Levittown, Pa., was formerly manager of market development. * * * H. Rodman Smith, formerly chief application engineer, has been appointed assistant sales manager, and resides in Norristown, Pa.

Werner G. Smith, Inc., has announced the appointment of John D. Hetchler to manage the firm's new chemical division in Cleveland, Ohio, for the manufacture of products to expand the company's present line. Chemicals to be used in textile synthetic fiber finishes and processing aids, etc., will be produced.

Sonoco Products Co. has acquired all of the outstanding shares of stock of the **National Paper Co.,** and the new facilities will be known as the National Paper Division of Sonoco Products Co. In addition to the production of paper, the new division will manufacture cones, tubes, and other paper products. C. W. Suggs, formerly safety coordinator for Sonoco, has been appointed manager of the division.

Steel Heddle Mfg. Co., announces that Thomas Starmont has been appointed plant and product manager of its textile bobbin subsidiary, Stedco-Southern, Inc. Mr. Starmont was formerly product manager of the special products division. The company has also announced the appointment of Walter Young as product manager of the throwing bobbin division, in addition to his present capacity of superintendent of this division. Mr. Young replaces Tom C. Jackson who has resigned. * * * Beginning late in May, textile plants of

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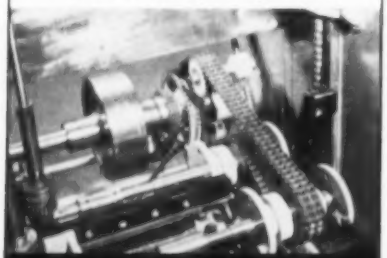

Precision Gear & Machine Co.
2001 N. Tryon St. • ED 4-6857
Charlotte 1, North Carolina

SUPPLIERS News — WHAT THEY ARE DOING

the Piedmont area of the Carolinas were saluted (one each week) in a series of programs on WFBC-TV, Channel 4, under the sponsorship of the firm, the purpose of which was to further acquaint the public with the contributions of the textile industry to the nation.

Mr. King
Mathieson

Mr. Carman
Universal

Mr. Horton
Livermore

Mr. Jenny
Jersey State

Mr. Bond
Metro-Atlantic

Mr. Bookout
Fafnir Bearing

Mr. Mackey
Osco Chemical

Mr. Moyer
T-M-W

Appointment of W. Adrian King as general sales manager of the industrial chemicals division of **Olin Mathieson Chemical Corp.** has been announced. * * * The industrial chemicals division has moved its St. Louis district sales to 8000 Bonhomme St., St. Louis 5, Mo., from the Rialto Building at 220 North Fourth St. Charles H. Larson is district sales manager.

Edward D. Carman has joined the instrument sales staff of **Universal Winding Co.** to cover the South Carolina and Georgia territories, working out of the Charlotte, N. C., office.

Paul S. Horton, formerly installation supervisor with the Pneumafil Corp., has joined the staff of **H. F. Livermore Corp.** as sales engineer, covering textile mills in N. C., S. C., and Tenn., with headquarters in the firm's new sales office on Wade-Hampton Boulevard in Greenville, S. C.

Jersey State Chemical Co. announces the appointment of Albert R. Jenny to the newly-created position of general sales manager. Mr. Jenny had previously been affiliated, in a management capacity, with major chemical producers in the U. S. and Canada, and his new duties include the coordination of the firm's manufacturing and sales expansion plans with a number of new products for the textile and other industries.

Metro-Atlantic, Inc., announces the recent appointment of Boyce C. Bond as resident manager of the Philadelphia sales territory. Mr. Bond, formerly director of the British Dyestuff Corp. laboratories, now the Imperial Chemical Industries, was also employed by the Farr Alpaca textile plant as superintendent of dyeing and finishing. Office and warehouse facilities are being set up in the Philadelphia area.

Conrad B. Bookout has joined the staff of **The Fafnir Bearing Co.** as sales representative in the Charlotte, N. C., territory. Mr. Bookout was formerly associated with the Pneumafil Corp., and also Precision Gear & Machine Co., both in Charlotte.

A. C. Mackey has joined the **Osco Chemical Co.** in the capacity of vice-president and sales manager, with headquarters at 710 Tenth St., N. W., Atlanta, Ga. Mr. Mackey was formerly director of the hosiery and in-

dustrial chemical divisions of the Onyx Oil & Chemical Co.

Textile Machine Works recently announced the promotion of Charles R. Moyer to the circular knitting section of the braiding machine division as assistant to the manager. Mr. Moyer will assist in the direction of the development, production, and sales of the firm's circular machines. Mr. Moyer was formerly in the sales department of the knitting machine division. * * * During recent months the company purchased the patent rights on a 400-needle, 2-feed circular machine held by H. E. Crawford Co., Inc., and has begun to build a pilot lot of these ladies' seamless hosiery machines. The initial lot will be placed in various mills throughout the country, and upon the successful completion of tests, the company plans to go into full scale production.

Construction will start in July on a new addition to the instrument manufacturing plant of **The Foxboro Co.** Completion of the addition, scheduled for early summer of 1958, will place most of the company's manufacturing activity in one story quarters, expanding potential production capacity by 50%.

The New England headquarters of **Interchemical Corp.** — textile colors division — are now housed in a new building located at 201 Armistice Boulevard, Pawtucket, R. I., which affords larger offices, fully-equipped laboratories, and greater warehousing facilities for the company's Aridye and Aquaprint pigment colors and Interchem dyes for printing and dyeing textiles.

On June 1, the **Trumeter Co.** moved from 1265 Broadway to larger quarters at 38 West 32nd St., New York 1, N. Y., with service department at 39 West 31st St., New York 1. Telephone Number Longacre 4-0666.

The name of **Union Carbide and Carbon Corp.** has been shortened to Union Carbide Corp. Carbide and Carbon Chemicals Co. has become Union Carbide Chemicals Co.; Linde Air Products Co., another subsidiary, is changing its name to Linde Co.

F. C. Ames has accepted a position as sales engineer with **United States Supply Co., Inc.,** with headquarters at the East Providence, R. I., office, to

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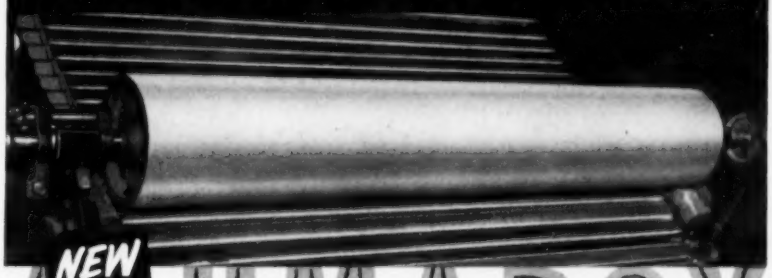

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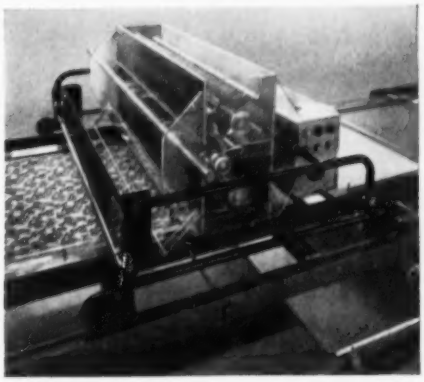

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2—10x5 Whitin-Woonsocket 1952 model G10C Slubbers with Interdraft, 7½" gauge, 120 spindles each, Bijur lubrication system, single carriage.
1—10x5 Whitin-Woonsocket 1951 model G10C Slubber with Whitin Interdraft, 120 spindles, 7½" gauge, single carriage.
1—10x5 Whitin 1939 model G10 Slubber with Interdraft, 120 spindles, 7½" gauge, single carriage.
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SUPPLIERS News
WHAT THEY ARE DOING

represent the firm's line of wet processing machinery, including dryers and curing units, padders, batchers, washers, dry cans, dye kettles, scrays, etc., specialty supplies such as guiders, mixing equipment, counters, and rubber compressive shrinking blankets.

At **Mathews Conveyor Co.** Odd H. McCleary has been elected president, succeeding L. T. Sylvester, who was elected chairman of the board of directors. Mr. McCleary was promoted from vice-president and general manager and also was senior vice-president of the Canadian subsidiary and a director of the western subsidiary.

The appointment of Frank Supeno as a general sales representative at the Charlotte, N. C., branch of **Stein Hall & Co., Inc.,** has been announced. Mr. Supeno was formerly with the firm's adhesive department in the New York office.

Universal Dye Works, Inc., announces the completion of arrangements to license manufacturers, converters, and dyers of sweaters made of acrylic fibers to finish their garments with UT-formula (see TI for April, 1957, p. 211).

Marshall & Williams Equipment Co., Greenville, S. C., has been appointed southern sales representatives by **Radiant Heat Enterprises, Inc.**

George D. Billings, advertising manager of the **G. H. Tennant Co.,** has been elected president of the Minnesota chapter, National Industrial Advertisers Association.

Werner Textile Consultants is expanding its staff in the area of system and procedures work for textile firms. Latest addition to its staff of office management analysts is William Zwicker, formerly assistant to the vice-president at S. Augstein and Co., College Point, L. I. He will make his headquarters at Werner's planning and research development department in Larchmont, N. Y.

Sumner H. Williams has been named co-ordinator of sales programming for the dyestuff and chemical division of **General Aniline & Film Corp.** Mr. Williams, inventor of the Williams Unit, will act as chairman of the new sales programming committee which will review and develop recommendations for the establishment of co-ordinated programs in product sales, commercial product development, marketing, advertising, and related areas of activities. He will also serve as technical sales consultant in developing sales and customer relations among major users of dyes, pigments, surfactants, and chemicals.

Lockwood Greene Engineers, Inc., announce the election of Edward B. Moebus and Samuel B. Roberts, vice-presidents, with headquarters in the New York office.

At the termination of their contract with the Denman Textile Rubber Co. on March 31, 1957, **The Terrell Machine Co.** ceased to represent the firm, and beginning with April 1, began representation of the **Denman Rubber Manufacturing Co.** The name of the new products to be made by the latter will be "Termaco," the registered trademark of The Terrell Machine Co.

National Starch Products, Inc., announces the establishment of a scholarship to assist senior high school teachers in completing further studies and to make them more proficient.

Under the terms of a new agreement recently consummated between **Fife Manufacturing Co., Inc.,** and the **United States Supply Co., Inc.,** the latter will represent the entire line of Fife automatic edge guiding equipment in Maine, N. H., Vt., Mass., Conn., R. I., and eastern N. Y., excepting New York City.

The Hartford Rayon Co. has moved its Greensboro, N. C., sales office to 430 W. Peachtree St., Atlanta, Ga.

T. R. Leebrick and James L. Painter have joined the **Uster Corp.** testing equipment department as service engineers for the mid-eastern and northern areas serviced by the company. Both will be headquartered at the main office in Charlotte, N. C.

Sandoz, Inc., is the new name of Sandoz Chemical Works.

The warehouse division of **Atlantic Steel Co.** has announced the opening by early August of a branch office and warehouse in Birmingham, Ala., at 4230 First Avenue, South.

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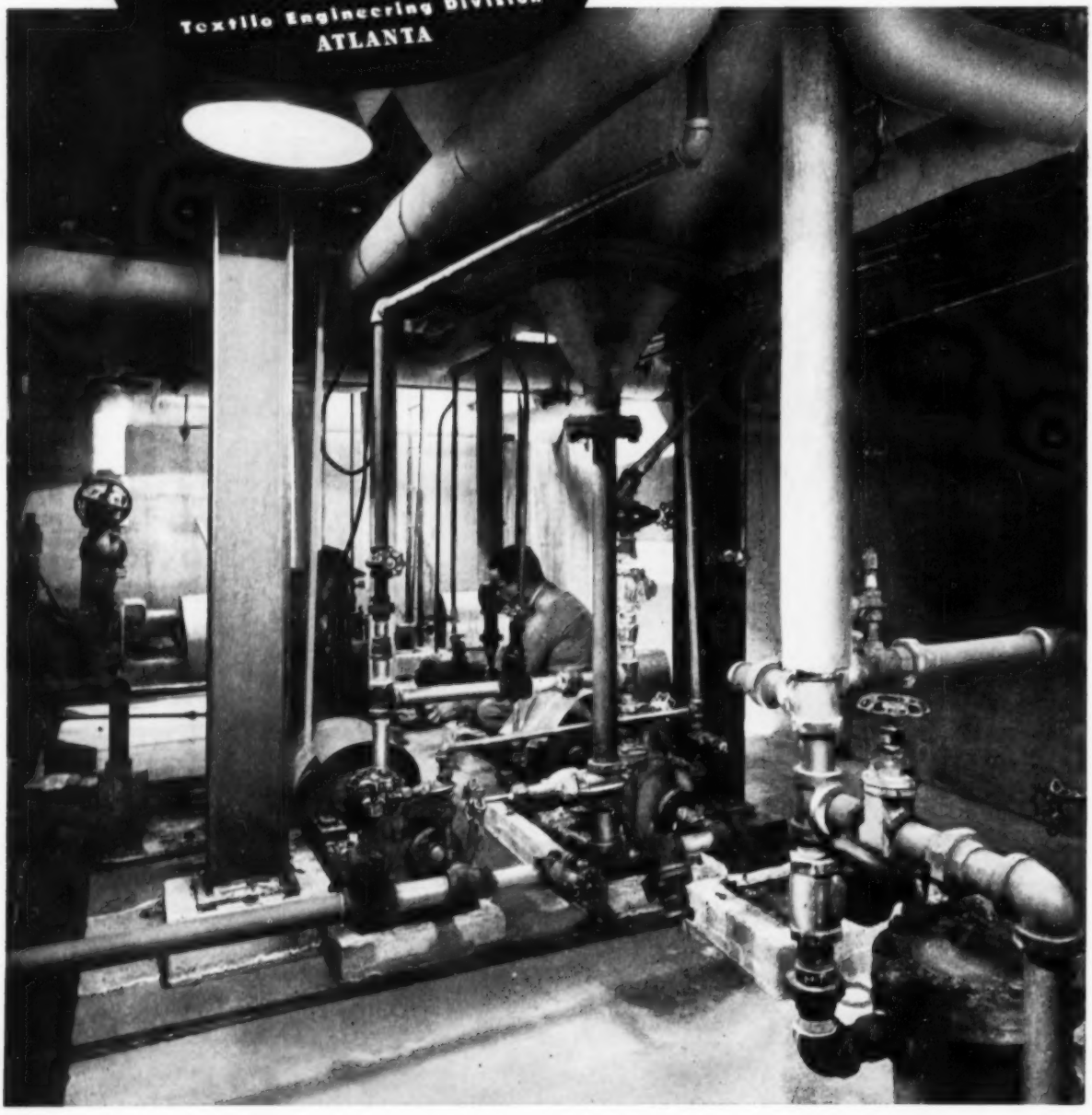

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to get Accurate
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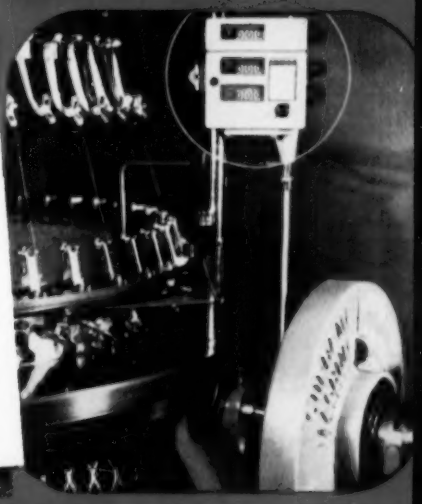

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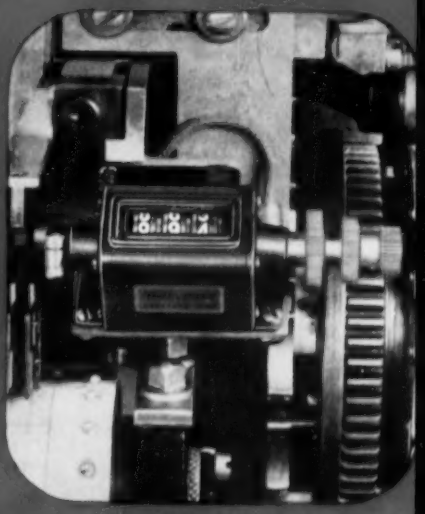
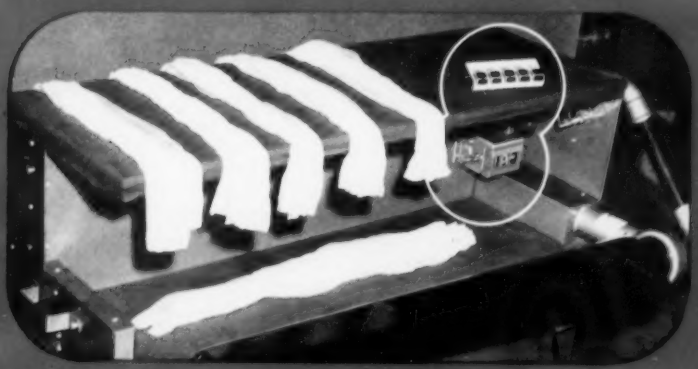


Small Subtractive Predetermining Counter on Philadelphia Jacquard Knitting Machine.



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